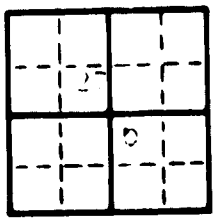
Form OGCC-1

(SUBMIT IN DUPLICATE)

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SALT LAKE CITY UTAH



LAND:

Fee and Patented ☐
State ☐
Lease No.

Public Domain ☒
Lease No. SL 071745-A

Indian ☐
Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

Notice of Intention to Drill	Subsequent Report of Water Shut-off
Notice of Intention to Change Plans	Subsequent Report of Altering Casing
Notice of Intention to Redrill or Repair	Subsequent Report of Redrilling or Repair
Notice of Intention to Pull or Alter Casing	Supplementary Well History
Notice of Intention to Abandon Well	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

December 19, , 19 71

Well No. 3 Unit is located 1980 ft. from {N/S} line and 1980 ft. from {E/W} line of Sec. 27

NW 1/4 SE 1/4 27 — 19S — R24E — SLM

(¼ Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Bonanza — Uintah — Utah

(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 5634.9 feet. (ground elevation)

A drilling and plugging bond has been filed with USGS (Operator is Mid America Mineral Inc., Caldwell and Covington are acting under designation of Agent)

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings, indicate mudding jobs, cementing points, and all other important work, surface formation, and date anticipate spudding-in.)

Caldwell and Covington as the designated agent for Mid America Minerals, Inc., propose to drill a 5500' upper Mesaverde test for gas or oil. The operator proposes to drill a 12-1/4" hole and set 300' of 10-3/4", 32.75 H 40 surface casing and cement with 150 sacks. We plan to drill a 6-3/4" hole and set 5½", N 80, LT&C, 11.60# production casing if gas or oil is found.

Note: Caldwell and Covington will drill under Mid America bond.

I understand that this plan of work must receive approval in writing by the Commission before operations may be commenced

Company Caldwell & Covington (Agent for Mid America Minerals, Inc.)

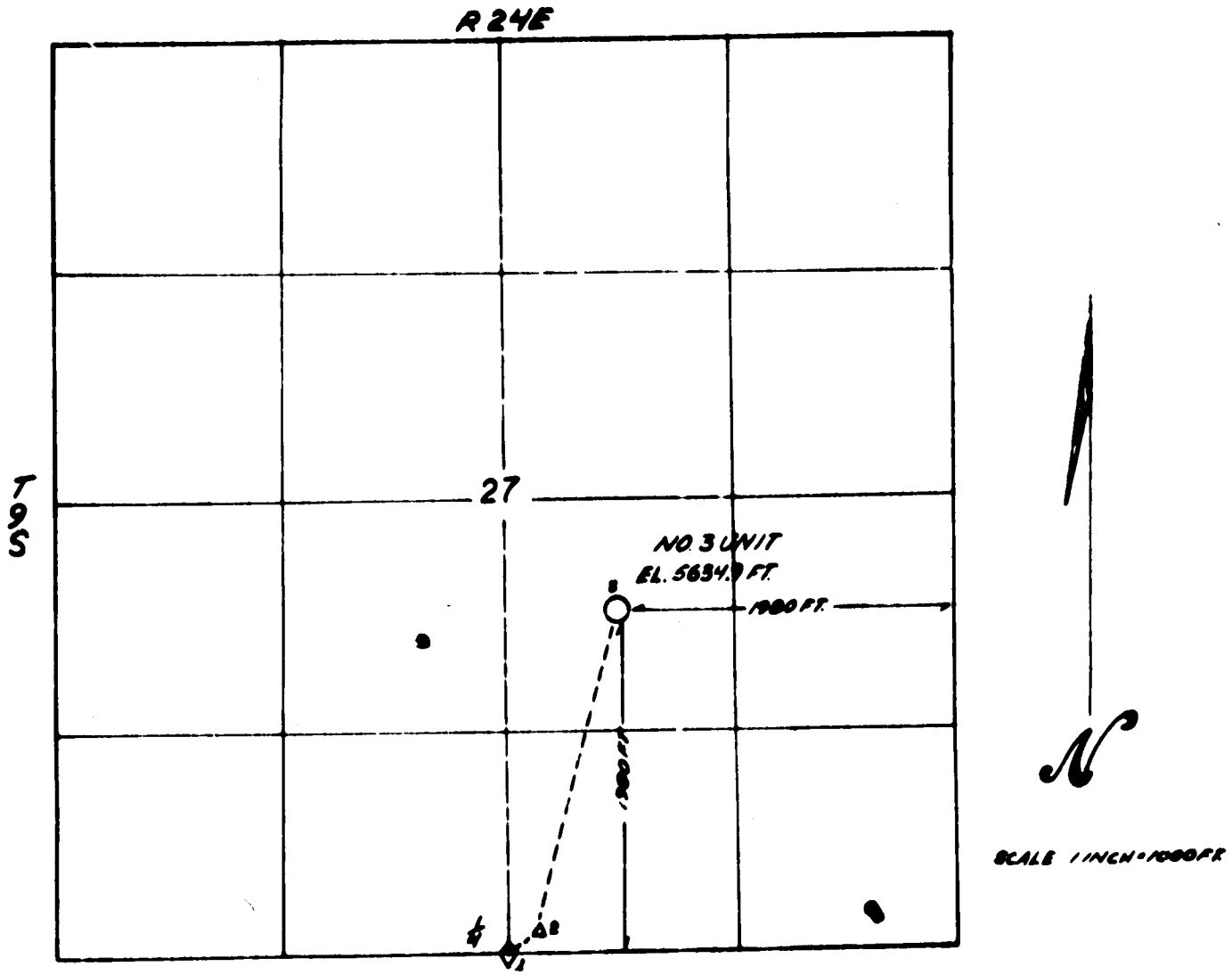
Address P. O. Box 473

Vernal, Utah

By Robert E. Covington

Title Partner

INSTRUCTIONS: A plat or map must be attached to this form showing the location of all leases, property lines, drilling and producing wells, within an area of sufficient size so that the Commission may determine whether the location of the well conforms to applicable rules, regulations and orders.



Robert L. Covington

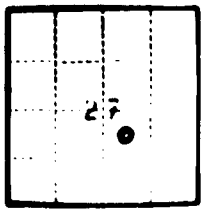
Copy H. L. G.

Budget Bureau No. 42-R358.4.
Form Approved.

Land Office UTAH
Lease No. S.L. 071725-A
Unit Bonanza

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY
NOTICE OF INTENTION TO ABANDON WELL	
Notice of Intention to Recommence Drilling Operations	X

INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE OR OTHER DATA

December 28, 19 56

Well No. 3 is located 1980 ft. from [N/S] line and 1980 ft. from [E/W] line of sec. 27

C NW SW Sec. 27, T. 9 S., R. 24 E., S.L.M.
(¼ Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Wildcat (Field) Uintah (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 5630.9 ft. ground level.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Well was drilled to a depth of approximately 1,360'. A 15" hole was drilled with cable tools to 1,100'. Then 10-3/4" casing was set to 327'. Then drilled 8" hole from 1,100' to 1,360' and suspended.

Pacific Natural Gas Exploration Company will move in rotary tools and drill ahead with air to a total depth of approximately 6,000' into the Upper Mesaverde formation. The expected tops are as follows:

Uinta	- Surface	Wasatch	- 3,760'
Green River	- 1,270'	Mesaverde	- 5,475'

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company PACIFIC NATURAL GAS EXPLORATION COMPANY

Address 366 South Fifth East St.

Salt Lake City 2, Utah

Telephone: DAvis 2-2583

By M. Darwin Quigley

Title District Geologist

GPO 914974

FILE COPY

Form 9-331a
(Feb. 1951)

Budget Bureau No. 42-R358.4
Form Approved.

Land Office [illegible]

Lease No. [illegible]

Unit [illegible]

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			
Notice of Intention to [illegible]			X

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

[illegible], 19[illegible]

Well No. [illegible] is located 1980 ft. from {N/S} line and [illegible] ft. from {E/W} line of sec. 27

C [illegible] (¼ Sec. and Sec. No.) [illegible] (Twp.) [illegible] (Range) [illegible] (Meridian)

[illegible] (Field) Uintah (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is [illegible] ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible] 7-50'.
7. [illegible]

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Pacific Natural Gas Exploration Company

Address 300 South 5th West Street

Salt Lake City, Utah

DAvis 2-2533

By [signature]
R. D. Goulden

Title Petroleum Engineer

GPO 914074

Form 9-330 (Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

Form approved. Budget Bureau

5. LEASE DESIGNATION AND SERIAL NO.: S. L. 071725-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: (Not Applicable)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL:

b. TYPE OF COMPLETION: NEW WELL / WORK OVER

7. UNIT AGREEMENT NAME: Bonanza

8. FARM OR LEASE NAME: (Not Applicable)

2. NAME OF OPERATOR: Pacific Natural Gas Exploration Company

9. WELL NO.:

3. ADDRESS OF OPERATOR: 3. South Fifth East, Salt Lake City 2, Utah

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL: At surface 1320' ... Sec. 27, T. , R. 24E, ...

At top prod. interval reported below (as above)

At total depth (as above)

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 27, T. , R. 24E S.L.M.

14. PERMIT NO. (Not Applicable) DATE ISSUED

12. COUNTY OR PARISH: Uintah 13. STATE: Utah

15. DATE SPUDDED: 12-30-61 16. DATE T.D. REACHED: 4-3-63 17. DATE COMPL. (Ready to prod.): 10-15-63 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: 5647' K.B. 19. ELEV. CASINGHEAD: 5635'

20. TOTAL DEPTH, MD & TVD: 7288' MD & TVD 21. PLUG, BACK T.D., MD & TVD: ' MD & TVD 22. IF MULTIPLE COMPL., HOW MANY*: (Not Applicable) 23. INTERVALS DRILLED BY → ROTARY TOOLS: 1340' 7288' CABLE TOOLS: 0'-1340'

24. PRODUCING INTERVAL(S), OF THIS COMPLETION: 4917' - ' MD & TVD

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: I-ES, G-N, ML-C, FDL, G

27. WAS WELL CORED: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
10 3/4"	Unknown	327'	Unknown	200 sax	(None)
7 5/8"	26.40	273'	9 7/8"	175 sax	(None)
4 1/2"	11.60 & 13.50	280'	6 3/4"	154 sax & shoe	(None)
			6 11/16" CB	309 sax	

29. LINER RECORD / 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
(None)					2 3/8"	4912'	(None)

31. PERFORATION RECORD (Interval, size and number)

4" holes @ 6115', 5699', 5197' & 5044'
4" h.p.f. 7228'-7220' 7216'-7214' & 7198'-7196'
2" h.p.f. 7003'-7000 6951'-6948' 6763'-6760'
6690'-6687' 6... 6077'-6074 5687'-5684'
5172'-5169' & 4922'-4919'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD) / AMOUNT AND KIND OF MATERIAL USED

33. PRODUCTION

DATE FIRST PRODUCTION: 10-15-63 PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump): Flowing WELL STATUS (Producing or shut-in): Shut-in

DATE OF TEST: 10-15-63 HOURS TESTED: 12 CHOKE SIZE: 3/4" PROD'N. FOR TEST PERIOD → OIL—BBL.: 0 GAS—MCF. WATER—BBL.: Nil GAS-OIL RATIO: -------

FLOW. TUBING PRESS.: 52 psig CASING PRESSURE: 497 psig CALCULATED 24-HOUR RATE → OIL—BBL.: 0 GAS—MCF.: 831 WATER—BBL.: Nil OIL GRAVITY-API (CORR.): ------

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Vented TEST WITNESSED BY: R. E. Covington

35. LIST OF ATTACHMENTS: History

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED TITLE Petroleum Engineer DATE 11/1/63

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
See attached history.			

38. GEOLOGIC MARKERS

NAME	TOP: MEAS. DEPTH	TOP: TRUE VERT. DEPTH
See attached history.		

SQUEEZE CEMENTING, PERFORATING, FRACING AND TESTING

1. After cementi[illegible] at 7[illegible]', [illegible] was cleaned out to a [illegible] 72[illegible]' (T.D.).

2. **Perforated** 4½" h.p.f. (jet) 722[illegible]'-7226', 7216'-7214', and 71[illegible]'-71[illegible]'.

3. **Swab tested** the combined three intervals above through 2 3/8" tubing with packer set at 7179'. [illegible] average of 12 B/[illegible] water with a [illegible] and a very small amount of gas.

4. **Squeeze cemented** the combined three intervals above with [illegible] sacks of cement. Packer was set at 71[illegible]'.

5. **Perforated** 4½" holes (jet) at 6115', 5699', 5197' and 4944'.

6. **Squeezed** each set of holes with 25 sacks of cement, final pressure on each stage, 3000 pounds.

7. **Perforated** 2½" h.p.f. (jet) from 7003'-7000', 6951'-6948', 6763'-6760', 6690'-6687', 6586'-6583', 6077'-6074', 5687'-5684', 5172'-5169' and 49[illegible]'-4[illegible].

8. **Fraced** the interval [illegible] with 200 barrels of liquid CO_2.

9. **Swab tested** as follows:

Interval	Recovery
7003'-7000'	No gas or fluid.
6951'-6948'	" " " "
6763'-6760'	Med. to light blow of gas. No fluid.
6690'-6687'	No gas or fluid.
6586'-6583'	" " " "
6077'-6074'	Light blow of gas. No fluid.
5687'-5684'	No gas. Slight amount of salt water.
5172'-5169'	Light blow of gas. Slight amount of salt water.

10. **Squeeze cemented** perforations from 5172'-5169' with 25 sacks.

11. **Fraced** interval from 7003'-7000' with 200 barrels of liquid CO_2. Recovered large quantity of salt water.

12. **Set bridge** plug at 6[illegible]00'.

13. **Fraced** interval from 6763'-6760' with 200 barrels of liquid CO_2. Had medium blow of gas but well loaded up with salt water and died.

14. **Set bridge plug** at [illegible]74[illegible]'.

15. **Fraced** interval from 66[illegible]0'-6687' with 100 barrels of liquid CO_2. Zone tested wet with only a small amount of gas.

16. **Set bridge plug** at 6615'.

17. Fraced interval from [illegible] with 100 barrels of liquid CO_2. Tested approximately 1400 mcfd gas after CO_2 was recovered.

18. Fraced interval from 6077'-6074' with 100 barrels of liquid CO_2. Tested approximately 800 mcfd gas with [illegible] spray of water.

19. Fraced interval from 5687'-5684' with 100 barrels of liquid CO_2. Tested approximately 470 mcfd gas with very [illegible] spray of water.

20. Refraced the interval [illegible] with 200 barrels of liquid CO_2.

21. Ran 2 7/8" tubing at [illegible]' with packer at 4[illegible]'.

22. Swab tested Mesaverde intervals ([illegible]'-[illegible]'). Had medium blow of gas after each swab run but will [illegible].

23. Set bridge plug at [illegible]'. ✓

24. Ran 2 3/8" tubing to [illegible]' (K.B.).

25. Flowed well through 3/4" orifice in 2" critical flow prover for 12 hours. Pressure stabilized at [illegible] psi on prover.

26. Shut well in. [illegible]' pressure, 1210 psi.

WELL SUMMARY

Company:	Pacific Natural Gas Exploration Company
Well:	Bonanza Unit #3
Area:	Bonanza, Utah
Location:	1980 N/S; 1980 W/E; Sec. 27., T9S-R24E Uintah County, Utah
Well Geologist:	Robert E. Covington
Elevation:	5647 K.B. 5635 Gr.
Contractor:	Barker Well Service Company
Spudded:	12-30-61 (with cable tools) - drilled to 1340'. Shut down 8-17-62. Spudded 12-30-62 with rotary tools.
Finished Drilling:	April 6, 1963
Casing:	10-3/4 at 327' w/200 sx. 7-5/8 O.D. J-55, 26.40#, ST&C at 3272.60 K.B. with 175 sx. 4-1/2" 13.5 N-80 & J-55, 11.6#, Cem. at 7280 w/154 sx. CP at 6162 w/309 sx.
Cores:	See Core Data Sheet
Drill Stem Tests:	See Drill Stem Test Data Sheet
Logs:	I. Mud Logging Unit: Rocky Mountain Geo-Engineering Co. 4691-7288

II. Schlumberger:

Log Type	Interval
(1) Gamma Ray	328-3365
(2) Gamma Ray-Neutron	Surf.-7237
(3) Caliper-Formation Density	328-3295
(4) Induction	328-3299
(5) Induction-Electric	3273-7238
(6) Sonic-Caliper	3273-7236
(7) Welex Bond Log, 4500-7290	
(8) Schlumberger Correlation Log	

'3

CHRONOLOGICAL LOG

December 28:

December 29:

December 30:

December 31:

January 1: Drilled 1381-1387, no returns. Cemented with 75 sx. cement and 25% gilsonite plus 3% HA5. Tagged plug at 1358. Had 29' fillup. Recemented with plug No. 2, using 100 sx. cement, plus 25% gilsonite plus 3% HA5.

January 2: No returns. Ran cement plug #3 with 25 sack plug, 50% cement, 50% cal seal and 12½# gilsonite. Tagged plug at 1358. No fillup. Set plug #4, same as #3. Plug at 1338-20' fillup. Ran plug #5.. Used 50 sacks cement, 25# gilsonite, 3% HA5, 6% gel and 3# flow seal per 100#.

January 3: Wait on cement. Went in hole; tagged solid cement at 1220 at 1:00 a.m. and solid cement at 6:00 a.m. at 1139. Mixed mud - 70 bbls. to fill hole. Drilled from 650 to 900.

January 4: Reamed 438 to 1150'. Rigged up to drill with air.

January 5: Finished rigging up to drill with air. Reamed from 956 to 1150. Drilling 9-7/8' hole.

January 6: Reamed from 1150 to 1209. Drilled from 1209-1286.

January 7: Drilled from 1286 to 1487. Water flow at 1324. Survey at 1300 : 1½°

January 8: Drilled 1487 to 1630. Deviation survey at 1504 : 2°

January 9: Drilled 1630 to 1715. Wt. 16,000#, RPM 90.
Drilled 1715 to 1821. Wt. 20,000#, RPM 90.
Water sand at _____, blew approx. 380 bbls. fresh wtr/hr.

January 10: Drilled 1821-1889. Pulled out of hole for new bit. Lost tong pin in hole. Ran magnet on wire line. Ran magnet on drill pipe. Recovered fish.

January 11: Drilled 1889 to 1950. Had tight hole on connection. Worked pipe free and circulated.

January 12: Drilled 1950-1987. Wt. 10-12,000#, Rotary RPM 80. Froze up at 6:30 a.m. Hole tight - worked free, pulled out of hole, shut rig down.

January 13-15: Rig shut down due to freezing. Sub-zero weather.

14

January 16: Lay down drill pipe and start tearing down rig. Preparing to move in bigger rig.

January 17: Finish tearing down Rig #2. Begin rigging up Rig #3.

January 18: Rigging up.

January 19: Drilling rat hole with air.

January 20: Picked up drill pipe. Went in hole with 30 joints. No returns. Blew hole - no returns. Ran 10 joints. No fluid return, ran 5 joints. Cleaned out 30' to bottom. Drilled 1987-2014.

January 21: Drilled 2014-2117. Wt. 18,000-20,000#. RPM-80. Reamed to bottom after tripping for Bit #5.

January 22: Drilled 2134-2407. RPM-80, Weight on bit 10,000-18,000.

January 23: Drilled 2407-2569. RPM-100, Weight on bit 20,000. Lost split rings out of rotating head. Went in hole with magnet.

January 24: Cleaned out fish. Drilled 2569-2814. Wt. of string 56,000#; weight on bit 10-18,000. RPM-80. Survey at 2550 : 1½°.

January 25: Drilled 2569-2922. Lost circulation zone at 2800'.

January 26: Drilled 2922-3113. No returns.

January 27: Drilled 3113-3263. No returns. Stuck pipe. Worked free. Cleaning out and working pipe. Added gilsonite to slick up hole.

January 28: Drilled 3262-3327 on bit No. 9, Reed YHRA. Wt. of string 60,000. Wt. on bit, 6-10,000. RPM 90-100.

January 29: Drilled 3327-3367, hole heaving, 3300-67. Had 10-15' fillup each time raised Kelly for connection. Ran deviation survey, 2° at 3245. Ran Schlumberger Induction-Gamma Ray and Formation Density log with Caliper Survey. Sonic could only get to 3299 due to fillup. Went in hole and cleaned out. Ran Casing.

January 30: Ran 103 joints, 7-5/8" O.D., 26.40#, J-55, ST&C, landed at 3272.60 K.B. Cemented with 1'5 sx, 50% cement, 50% poz-mix, with 25# gilsonite per 100#, preceded by 1 sack gel. Displaced at 4:15 a.m. Ran temp. survey. Top cement at 2800'. W.O.C. 24 hrs.

January 31: Trip in hole, picking up 7 drill collars. Blew water out of hole. Found cement top at 3225. Drilled cement 3241-3271. Drilled shoe 3271-72. Cleaned out hole 3272-80. Blew hole and cleaned out. Zone 3272-80 still heaving. Adding soap. No returns until soap charge hits bottom. Bit is Reed YHRA, 6-3/4".

February 1: Drilled 3272-3697. Trying to dry up hole. Dusting while drilling 3390 to 3697.

February 2: Drilling and blowing hole, using powder to dry hole up. Wet from 3729-3811. Ran survey, 3800', 1½°. Air drilled 3697-3845. Mist drilled 3845 to 3875.

February 3: Drilled 3875-4028. After trip for bit #2 had 60' fillup in hole to clean out, from 3920-3980.

February 4: Drilled 4028-4234. 12 hours trying to dry up hole. Pipe sticking. Added 3 sx powder while dry drilling. Pulled up into casing, went back to bottom, cleaned out 390' of fillup.

February 5: Drilled 4234-4377. Wt. 10,000, RPM 80. After trip for bit No. 3 cleaned out 540' of cavings. While drilling 4234-4271 stuck pipe for 5½ hours.

February 6: Drilled 4377-4671. Had 20' sand with approximately 100,000 cubic ft. gas from 4470-90. Well started dusting at 4495. Wt. 10,000, RPM 90, string wt. 70,000. Survey at 4300' : 1½°. Hit dampness at 4670, recommenced mist drilling. Stuck pipe at 4671.

February 7: Worked pipe. Still stuck. Pumping mud in hole. Backed off manually 18 stands from top of hole. Went in hole. Screwed into fish.

February 8: Ran in with McCullough tools. Tried to back off drill pipe. Backed off at 3985. Pulled out of hole. Recovered 65 stands. Rigged up to drill with mud. Picked up 6 drill collars. Went in with bit to condition hole. 51 stands drill pipe and 3 stands drill collars.

February 9: Ran 57 stands in hole. Reaming to bottom. Reamed from 3800-3832 and worked through tight zone 3832-3862.

February 10: Finished washing to top of fish. Made short trip and found 4' of fillup. Circulated, made short trip, 4' of fillup. Tripped out for wash over pipe.

February 11: Washed down for fish with wash pipe. Washed over fish 3985-4030. Hole caving. Conditioned hole and redrilled to 4030. Pulled out of hole.

February 12: Went in with wash pipe. Hole tight. Pulled back out and went in with bit #4 and washed to fish. Pulled out with bit and went in hole to try to screw into fish. Couldn't screw into fish. Pulled out of hole and picked up overshot and tripped into hole.

February 13: Couldn't get fish with overshot. Came out of hole and went in with bit No. 5, conditioned hole. Tripped in with overshot and couldn't get on fish. Tripped out and went in with bit to condition hole. Fish dropped to bottom.

February 14: Pulled out of hole. Ran Schlumberger and logged top of fish at 3994. Ran Caliper log - hole badly caved in. Went in with overshot with knuckle joint.

February 15: No indication of fish to 4004'. Went in with bit and drilled to 4018. Ran Schlumberger to 4003 feet. Found top fish at 3998.5 feet. (Fish is 10 drill collars and 12 joints drill pipe plus bit).

February 16: Went in hole with wall hook and crooked joint. Latched onto fish in grapple. Pulled 18,000# and tore loose. Came out of hole. Grapple was torn up. Went in hole with double bowl grapple.

February 17: Got hold of fish and pulled it 15' off bottom. Came out of hole with 1 joint. Went back in with 4½" overshot - recovered all of fish. Went in hole with bit to condition hole.

February 18: Conditioned hole.

February 19: Ran in hole with bit and reaming hole to bottom. Drilled 4692-4704, mixing mud. Raised viscosity from 49 to 65. Dropped mud weight from 9.2 to 9.0. Weight on bit 18,000#. RPM 75, pump pressure 75, pipe weight 68,000.

February 20: Drilled 4704-11. Tripped for new bit. Drilled 4711-4749. Tripped for new bit. Running desander.

February 21: Drilled 4749 to 4825. Viscosity 51, weight 9.2, water loss 6.2 pipe weight 73,000, RPM 80, pump pressure 1000#, wt. on bit 23-25,000#, pH 10.5, filter cake 1/32.

February 22: Drilled 4825-4831. Dumped and cleaned mud pits. Washed bridges from 590' off bottom to T.D. 10' of fillup. Drilled 4831-4868.

February 23: Drilled 4868-4913. Drilling break. Drilled 5' into break to 4918. Total gas : 80 units. Circulated for samples. Drilled 5' more into break to 4923, total

gas to 140 units. Drilled 4923-49. Circulated for samples and conditioned mud in preparation for coring or drill stem testing.

February 24: Ran DST No. 1: Interval 4886-4949. ISI 30". IHP 2322. ISIP 20. Op. 2 hrs. 30". Op. w/strong blow. Gas to surf. in 30". Burned w/orange-yellow flame. Still building up at end of test, although had stabilized at 132,000 cu. ft. gas/day. FHH 2306. FSIP 2123. IFP 78. FFP 107. Rec. 230' gas cut mud. Bottom 42' of anchor was plugged with cuttings. Went in with bit, drilled 4950-57.

February 25: Drilled 4957-5076, circ. for samples 4977, 4993, 4999, 5024, 5051, 5066 and 5076.

February 26: Went in with core barrel. Cut Core No. 1, 5076-87, cut 11.0', recovered 7½'. Reamed core hole with bit No. 12. Drilled 5088-5133.

February 27: Drilled 5133-5246. Circulated for samples at 5168, 5223, 5246. Mud viscosity: 52, weight 9.6, water loss 6.6. Survey at 5223 : 3/4°. Weight on pipe : 78,000#. RPM : 90. Pump press. : 1000#, wt. on bit : 26,000#.

February 28: Drilled 5246-5302. Circ. for samples: 5256, 5266, 5290, 5302. Went in with diamond core bit. Cored 5302-5362, full recovery.

March 1: Ran DST #2, 5246-5362, pkrs. failed. Went in with bit and conditioned hole.

March 2: Ran DST 2-a, Pkr. at 5176. T.D. 5362. Pkr. failed. Viscosity 53, wt. 9.6#. Drilled 5362-5431. Circ. for samples 5402-5372 & 5431. Pipe wt. 81,000, visc. 46. wt. 9.7.

March 3: Went in with diamond core bit for Core #3. Cored interval 5431-5484. Full recovery. Went in with bit and conditioned hole. Had to ream 5270-5465.

March 4: Ran DST #3, interval 5372-5484. Tool plugged. Drilled 5484-94 and conditioned hole. Made short trip, 17' of fillup. Circulated hole for DST.

March 5: Ran DST #4, interval 5416-5494. Misrun. Hole tight or bridged at 5422. Drilled 5494-5546. RPM 77, string wt. 82,000, pump press. 900#, wt. on bit 27,000.

March 6: Drilled 5546-5660.

March 7: Drilled 5660-5701. DST No. 5, interval 5678-5704. Tool plugged. Drilled 5701-5719.

March 8: Drilled 5719-5755. Ran DST No. 6, interval 5682 to 5690.

March 9: Drilled 5755-5853. Visc. 60, wt. 10.0, W.L. 5, ph 11, Cake 2/32".

March 10: Drilled 5853-5959.

March 11: Drilled 5959-5996. Ran DST #8, tested interval 5943-5956, pkrs. failed. Drilled 5996-6016.

March 12: Drilled 6016-6108. Trip out for new bit and circ. for DST at interval 6076-6108.

March 13: Ran DST No. 9, interval 6079-6108. Drilled 6108-6116.

March 14: Drilling 6116-6213.

March 15: Drilling 6213-6300.

March 16: Drilling 6300-6363.

March 17: Drilling 6363-6421.

March 18: Drilling 6421-6471.

March 19: Drilling 6471-6593.

March 20: Drilled 6522-6536. Waiting on diamond drilling bit. Relined brakes. Went in with conventional bit. Drilled 6536-5547.

March 21: Drilled 6547-6559. Tripped out and went in with diamond bit. Ran in hole to 3200'. Rig down repairing clutch.

March 22: Repaired clutch. Drilled with diamond drilling bit 6559 to 6632.

March 23: Drilled 6632-6729

March 24: Drilled 6729-6818. Stuck pipe at 6818. Worked pipe, clean mud tanks.

March 25: Mixed mud, circulated hole, pulled loose, drilled 6818-6823, stuck pipe, conditioned mud, pulled loose and tripped out of hole, leaving 1 stabilizer wing in hole. Went in with Bowen junk basket. Hit bridge at 6600'. Plugged basket and came out of hole with plugged pipe.

March 26: Cleaned out 3 drill collars which were completely plugged with solidified gilsonite. Went in hole with Bowen junk basket. Cored from 6823-6827. Tripped out and had recovered 1/2 of stabilizer wing. Went in hole with bit and junksub. Hit bridge at 4250. Came out to check cones. All cones locked. Put on new bit and went in hole after re-dressing bottom stabilizer.

March 27: Drilled bridges 4250-4310, 6750-6823. Cleaned out 6823-27. Drilled 6827-6832 and conditioned hole. Came out and went in with diamond drilling bit. Drilled 6832-6888.

March 28: Drilled 6888-6902 with diamond drilling bit. Bit stopped drilling and pressure began to build up. Trip out to check bit. Went in with rock bit. Drilled 6902-6931.

March 29: Drilled 6931-6935. Went in with core barrel to cut core No. 5. Cored 6935-6994. Full recovery.

March 30: Cored interval 6994-7053, full recovery, Core No. 6. Tripped in for Core No. 7. Hit bridges, 4300-4500. Hoisted bit.

March 31: Drilled 7053-7070. Cut Core No. 7. Cored 7070-7079.

April 1: Cut Core No. 7, 7079-7130, full recovery. Cut Core No. 8 7130-7190, full recovery. Mud heavily gas cut from sand 7175-90. Cut weight from 9.6 to 8.8#/gallon. Conditioned mud.

April 2: Cut Core No. 9, 7190-7212. Well gassing, mixed mud. Closed blow out preventors. Mixed 11.6# mud. Circulated through kill line.

April 3: Finished Core No. 9, cored 7217-7223. Went in with bit. Drilled 7223-7243.

April 4: Circulated samples, tripped out and strapped pipe. Ran Schlumberger. Went in with bit. Depth Correction: 7236-7243. Drilled 7236-7249.

April 5: Drilled 7249-7259. Lost circulation 7257. No returns. Mixed mud. Went in with core barrel and cut Core No. 10, coring 7259-7270.

April 6: Cored 7270 to 7288. Cut 29 feet, full recovery. Ran logs to T.D. Laying down core barrel, drill collars and drill pipe. Preparing to run casing.

20

Formation	Top	Thickness	Mean Sea Elev.
Uinta formation	Surface	1240	
Green River	1240	2510	+5407
Wasatch	3750	1210	+1897
Paleocene	4960	515	+687
Mesaverde	5475		+172
Sego	7015	135	-1368
Buck Tongue	7150		-1503
T.D.	7288		

Perforations:

Perf. 7227-29, 10-12, 7194-96 w/4 crack jets/ft.

21

SAMPLE DESCRIPTIONS

1400-10	Marlstone, gray to brown, laminated to massive, with interbedded brown, organic varying. Pyrite, rare.
1410-20	Limestone, light gray, shaley, grading from lean to moderately rich in organic material, laminated in part.
1420-30	Marlstone, brown to brownish gray, finely crystalline, with some light gray chalky limestone, common.
1430-40	As above, with pyrite common.
1440-50	Marlstone, dark brown, highly organic, typical "oil shale", with some interbedded gray, chalky to shaley limestone.
1450-60	As above, with increase in limestone, gray, shaley.
1460-70	As above.
1470-80	As above.
1480-90	Shale, dark grey to brown, calcareous.
1490-1500	Shale, as above, with gilsonite, rare.
1500-1600	No samples.
1600-10	Shale, dark gray, calcareous, with some brown, organic - rich "oil shale".
1610-20	Shale, dark gray, calcareous, become laminated, in part.
1620-30	Shale, as above, becoming micaceous, grading in part into shaley limestone.
1630-40	Shale, as above, with increase in buff and brown calcareous shale.
1640-50	Shale, grayish-green, calcareous, laminated, finely micaceous. Tar globules, common. Some "oil shale" with v. fine stringers of gilsonite (?) in laminations.
1650-60	Shale, dark gray to black, calcareous, with some shale, as above. Few grains of sand, white, to clear, medium grain, very angular, friable.
1660-70	Shale, medium to dark gray, calcareous, with dead oil staining. Pyrite, rare.
1670-80	Shale, medium gray, v. finely micaceous, with black, tarry, dead oil staining v common. Tar globules, common. Some v. fine, clear, friable sandstone.

1680-90	As above, with appearance of marlstone, light gray.
1690-1700	As above, with increase in free tarry globules.
1700-10	Shale, black, brown "oil shale", gray, laminated to fissile to massive. Dead oil staining common, limestone, dk. gray, v. finely crystalline, common.
1710-20	Shale, black, with some "oil shale", lean to moderately rich.
1720-40	No samples.
1740-50	Shale, medium gray, very slightly calcareous, fissile to soft, with some buff, soft shaley limestone.
1750-60	No samples.
1760-70	Shale, medium to dark gray, slightly calcareous, with some brown "oil shale".
1770-1800	No samples.
1800-1890	No samples.
1890-1900	Shale, light, medium and dark gray, with some very lean brown "oil shale".
1900-10	Limestone, soft, light gray to white, coaquina, shaley.
1910-20	As above.
1920-30	No sample.
1930-40	Limestone, light gray, with some dark brown fn. gn. ss & brown "oil shale". Slight oily odor. Sample is ground very fine.
1940-50	As above.
1950-60	Limestone, white, soft, with considerable sandstone, fine to medium grain, subrounded,brown and with some brown "oil shale".
1960-80	As above.
1980-90	No sample.
1990-2000	Marlstone, gray, and "oil shale", very rich.
2000-10	Marlstone, tan and white, and shale, medium gray, with some finely crystalline brown to dark brown limestone.
2010-20	Shale, medium to dark gray, calcareous, with some white marlstone, dolomitic, as above. Limestone, sharp, medium brown, sucrosic, very common. Tarry staining on samples, common.
2020-30	As above.

32

2030-40	Marlstone, light gray to greenish gray, dolomitic, with some shale, as above. Tarry globules, rare.
2040-50	No samples.
2050-60	Shale, light to dark gray, calcareous, with some chert, light gray, sharp, angular, oil stained and tarry staining and globules, common.
2060-70	Marlstone, white, dolomitic, with some shale, medium to light gray, calcareous. Trace limestone, brown.
2070-2100	No samples. No returns while drilling.
2100-10	Marlstone, light to dark gray. Some very finely micaceous. Some limestone, brown, finely crystalline. Chert, white to gray, angular, common. Reamed hole to T.D. after tripping for new bit at 2117. Intermittent circulation.
2110-20	As above.
2120-30	Marlstone, dark brown, with some tan, platey, calcareous shale.
2130-40	Marlstone, white, with spotty, tarry, oil staining on few pieces. Some "oil shale", as above.
2140-50	Marlstone, white and gray, locally varied, with some medium brown marlstone.
2150-70	As above.
2170-80	Marlstone, white, with some gray marlstone.
2180-90	Marlstone, white and gray, with trace free, tarry globules.
2190-2200	Shale, dark gray, waxy, calcareous, with some white marlstone, as above. Tan, platy shale, common.
2200-10	Marlstone, white, gray and tan, with some local varyings.
2210-20	Marlstone, white, with some gray and tan marlstone.
2220-30	Marlstone, gray, with some white and brown marlstone. Limestone, brown, finely xln, common.
2230-40	A/B, with considerable oil staining brown, oily globules. Pyrites, rare.
2240-50	A/B w/considerable floating sand grains. Oil staining v. common.
2250-60	Sandstone, wh., v. fn. gn., hard, fractured, w/marlstone and shale, A/B
2260-80	No returns.

2280-90	Shale, dark gray, waxy, with some light gray and tan shale. Marlstone, white, common. Chert, brown, sharp, angular, rare. Limestone, white, coaquina, common.
2290-2300	A/B, with incr. in Coaquina Ls.
2300-10	A/B
2310-20	Sandstone, white v. fn. gn., w/black, carbonaceous flecks, with much interbedded shale, A/B.
2320-30	Shale, dk. gray, with white marlstone v. common. Trace brown oolites. Trace sandstone, white fn-med grain, with light oil staining.
2230-40	Limestone, white, coaquina. Pyrite, rare.
2340-50	A/B, w/incr. in sh, gry to black, sooty. Limestone, brown, oolitic, rare. Chert, brown, rare. Few coarse grain, clear, angular, floating sand grains.
2350-2400	No returns.
2400-30	No returns.
2430-40	Shale, dark gray and black, calcareous, with large amounts of limestone, brown, v. fn. gn. and marlstone, white, dense. Sandstone, white, clear, medium grain, no visible porosity, rare. Pyrite, rare.
2440-60	No returns.
2460-70	Shale, dark gray, calcareous, with considerable tan, buff and white marlstone. Trace limestone, grey, crystalline. Some soft, white, coaquina limestone.
2470-80	Shale, black to sooty, calcareous, soft, with considerable sandstone, v. fine grain, white, no visible porosity. Large brown to white quartz grains, well rounded, rare. Ostrocods, 1-2 mm, wh., common. Pyrite, common.
2480-90	Marlstone, tan to buff, oolitic and sandy in part, w/s dark gray shale A/B. Ostrocods, common.
2490-2500	Sandstone, white, v. fn. gn., no visible porosity. Ls, dark brown, common. Shale, grey, A/B, common.
2500-10	Marlstone, with some gray calcareous shale. Sandstone, white, fn. gn., tite, A/B, rare. Ss, tan, v. calc., silty, no porosity, rare. Tr. pyrite. Trace tarry globules.
2510-30	No returns.
2530-40	Sandstone, wh., fn. gn., w/Sl interbedded brown marlstone, "oil Shale". Marlstone, wh, soft, common.
2540-50	Sandstone, v. fn. to medium, friable, white, with interbedded shale, gray, and marlstone, tan.

2550-60 No sample.

2560-70 Lost junk in hole. Went in with magnet at 2569. No returns 2560-69.

2570-80 No returns.

2580-90 Limestone, tan, finely oolitic to sandy, with some sandstone, clear, tite, calcareous, med. gn. Tr. brn. chert. Trace ostrocod, white, 1 mm, oil stained.

2590-2600 No returns.

2600-2610 Limestone, tan to gray, ostracoded, with 1/2 to 2 mm. tan to gray ostracods. Some sandstone, white to clear, very fine grain, tite, with interlocked grains. Ls, wh., chalky, coaquina, common.

2610-40 No returns.

2640-50 Marlstone, gray, with interbedded black, oolitic limestone. Ls., brn, argillaceous, common. Many large, white to buff ostracods.

2650-90 No returns.

2690-2700 Sandstone, gray, v. fine grain, friable, silty to shaley.

2700-2710 No returns.

2710-20 Limestone, ostracodal, with tan and gray ostracods, 1-2 mm. Considerable ss, clear, white, fn. grain, tite.

2720-30 Sandstone, fine grain, silty, calcareous, tite, with considerable ostracodal limestone, A/B.

2730-40 Sandstone, white, calcareous, fine grain, tite, with black flecks, w/s/ medium grain ss. Many free ostracods, tan and gray, 1-2½ mm.

2740-50 Sandstone, white v. fine to medium, with angular to sub-rounded grains, calcareous. Ostracods, v. common.

2750-60 Sandstone, med. grain, white to gray, calcareous, A/B, some with black oolites or carboraceous flecks. Some gray and brown marlstone.

2760-70 Marlstone, grey, w/considerable limestone, dk. gray, v. dense, vitreous luster and much sand. A/B. Some brown limestone and marlstone.

2670-2800 No returns.

2800-10 Marlstone, brown, "oil shale", with considerable gray and black calcareous shale.

2810-20 Sandstone, white, fn-med gr., dirty, poorly sorted, v. calcareous, with considerable "oil shale", and light gray, calc. sh.

2820-30	Shale, dark gray to socty black, soft, waxy to arenaceous, ostracodal in part, calcareous, with some "oil shale", and some sandstone, A/B.
2830-40	Sandstone, white to gray, v. fn. to med. gn., calcareous, silty to arenaceous, tite.
2840-2920	No returns.
2920-3070	No returns.
3070-80	Ss, gry, m-cse gn, poorly sorted, silty to argillaceous, v. friable and calcareous, w/considerable sh, gry, fissile to blocky. Few ostracods. Tr. pyrite.
3080-90	A/B, grading into siltstone, calc., friable.
3090-3140	No returns.
3140-3290	No returns.
3290-3300	Shale, dk. gray-black, soft, w/s/ss, wh.-clear, fn. to med cse., friable. (Sample obtained after hole unloaded; pipe stuck at 3262. Loosened pipe, circulated and worked pipe. Drilled 3262-3297 with partial returns.
3300-3370	No returns.
3370-3380	No returns, except for occasional piece of sh, dk to med. gry, soft, earthy, sloughing and heaving in hole badly. Set casing, 7-5/8" at 3272.60. Drilled out cement. Zone still heaved. Shale has dull brownish yellow fluorescence and pale, milky blue cut with pale yellow ring under U.V. light on spot plate.
3380-90	Shale, med. gry, w/s/tan silty, soft shale.
3390-3400	Claystone and siltstone, tan to brown.
3400-3410	Sh, drk gry and med gry, A/B, w/few floating grains, brown well rounded med. coarse sand. Hole dusting good. Siltstone, tan, argillaceous, v. common. Some oil shale, tan to brown.
3410-20	Shale, A/B and siltstone. Few gry ostracods, 1-2 mm. Oil shale, tan, common.
3420-30	Siltstone, tan, A/B, w/sh. gry., A/B. Dull yellow-brown fluor.
3430-40	A/B, w/dull, brown-yellow fluor. Scattered fine particles of ss (?) and Ls (?) w/pale blue-wh. fluor.
3440-50	Oil sh, lean, tan.
3450-60	A/B, w/s/dk. gry-med. gry Sh.
3460-70	Shale, med. gry., w/gilsonite inclusions. Some olive shale, soft, waxy.

3470-80	Siltstone, light tannish gry.
3480-90	As above.
3480-90	A/B w/increase in Sh, med. gry.
3490-3500	A/B.
3500-10	Siltstone, gry, and shale, gry.
3510-20	Limestone, gry=wh, siltv to shalv.
3520-30	Limestone, A/B, w/black oolites.
3530-40	A/B.
3540-50	A/B.
3550-60	Limestone, white, coaquina, w/black oolites.
3560-70	A/B.
3570-80	A/B.
3580-90	A/B.
3590-3600	Limestone, A/B, with increase in shale, dk. gry, A/B.
3600-10	Shale, medium gry, w/some gilsonite inclusions. Dark gry Sh, common. Few large, brown, sub-rounded, floating sand grains.
3610-20	Limestone, gry-white, shaley to silty.
3620-30	A/B.
3630-40	Limestone, tan-gry, A/B, w/incr. in gry sh., dull yellow-brn. fluor.
3640-50	A/B.
3650-60	A/B w/s/ bright green. Soft shale at 3660.
3660-3730	A/B.
3730-40	Ss, brn, v. fn. gn., shaley, w/s/dk. gry sh. Trace dampness. Some free, med. gn., rounded sandstone.
3740-50	Ss, A/B, w/oolites and ostracods, v. shaley. Wet.
3750-3860	No returns. Trying to dry up hole.
3660-3740	No returns.
3760-70	Shale, red.
3770-3850	No samples, no returns.

3850-60	Sh, dk. grn., w/s/red. mottled shale. Sh. dk. gry, common.
3860-70	No sample.
3870-80	Shale, light tannish-red, bentonitic.
3880-90	Shale, light red w/s/grn. sh. Gilsonite, common.
3890-3900	A/B, w/large filmy black sheet-like pieces of biotite mica (?).
3900-20	No sample.
3920-30	Sandstone, white, fn. to med. gn., poorly sorted, calcareous, dirty, tite, w/s/grn. shale fragments, reworked appearance; Ss is hard. Some shale, red and green, calcareous. Good samples. "Mist drilling". Sh, maroon, rare & tr. gry. blocky Sh and grn. sandy Sh.
3930-40	Sandstone, A/B, w/interlocked gns. No show. Shale, A/B, v. common. Some mottled shale.
3940-50	Shale, maroon, dark & light green, gry grn, mottled red-grn, w/Ss, A/B, v. common.
3950-60	Sandstone & Sh, A/B. Shale is blocky to platy, in part. Some free floating med. gn., rounded Ss. Tr. biotite.
3960-70	No sample.
3970-80	Sandstone, brn, fn gn, friable, shaley to calcareous, w/sh., A/B, red, grn, mottled.
3980-90	A/B, w/cavings very common.
3990-4000	Sh, red, maroon, dk. grn. Mottled red & grn, soft, bentonite grading into mudstone, v. calcareous. Cavings common.
4000-10	A/B w/sh becoming blocky to fissile, finely micaceous. Cavings, common.
4010-20	A/b w/s/pale gry-grn, shale and with some v. fn to med gn. friable brn to wh w/rounded, frosted gns, free floating.
4020-30	Mudstone, varicolored, maroon, green, gray, brown. Trace tar.
4030-40	Shale, maroon, green, gray, blocky to fissile, calcareous, w/s/ friable ss gns, v. fn. to med., wh. frosted rounded, free floating gns.
4040-50	Drilled like sand. Poor samples. Well unloading sporadically due to "mist drilling" conditions. Sandstone, red, v. fn. gn. to fn. gn., shaley, tite, calcareous, grading in part into shale. Rest of sample is shale, med. to dark brown and gray, w/s/red, grn, and maroon shale, all calcareous. Cavings v. common.
4050-60	Sh, A/B, maroon, brick red, gry wh, grn, brown, mottled, all calcareous. Cavings v. common.

4060-70	Ss, wh. md. cse. gn., w/interlocked gns, no porosity, v. calc. w/s/sh A/B. Trace limestone, brown, fnly xln. Most of sample consists of cavings.
4070-80	Shale, varicolored and mottled, A/B, w/tr. ss, grn, clayey to shaley, with fn. to med coarse, angular to sub-rounded gns. and w/tr. tan-gry, granular Ls. Cavings, common.
4080-90	A/B.
4090-4100	A/B w/1 piece ss, wh., v. coarse, ang., w/blk. carbonaceous material. Tr sooty sh.
4100-10	Ss, gry and grn-gry, fn. gn., well sorted, calcareous, w/s/blk flecks. Some Sh, A/B. Cavings, common.
4110-20	Shale, A/B, w/s/ss, A/B. Tr. brn-wh. chert w/oil stain?
4120-30	Ss, gry, v. fn. gn. to fn. gn., calc., well sorted. N.S. Tr. Ls., gry-wh, sucrosic to finely xln.
4130-40	Ss, wh, fn. to med. cse, v. friable, w/wh. frosted, sub-angular gn. N.S. Some Sh, A/B. Ss has black, carbon. flecks.
4140-50	Sh, grn, maroon, gry, mottled, w/s/ss, A/B.
4150-60	Mudstone, red, w/s/maroon & grn sh. Some gry, fn. gn., well sorted, calc. Ss.
4160-4210	No returns. Tried to dry up hole as hole started "dusting". Slight moisture from below casing prevented this. Drilling with air, soap and water. Pipe sticking.
4210-20	Mudstone, gry, grn, red, bentonitic. Cavings, v. common.
4220-30	A/B, w/few free floating, sub-rounded qtz. gns., med. coarse.
4230-40	Shale, red, grn, maroon. Mostly all cavings.
4240-50	Sandstone grn, fn-med. gn., v. Calcareous, tite, no fluor. or cut, w/much shale, A/B. Cavings, v. common.
4250-60	Shale, maroon, gry, green, tan, mottled, bentonitic to blocky. Tr. Ls, tan, fnly xln.
4260-70	Shale, med. gry to dk gry, w/s/ variegated Sh, A/B. Mustard colored shale appears. Few free floating sand gns, med. to cse., sub-rounded.
4270-80	Mudstone, mottled grn-red and red, v. bentonitic. Black, tarry, dead oil on water when washed. No fluorescence, but gives pale blue-yellow fluor. when cut with acetone under U.V. light.
4280-90	A/B.

31

4290-4300	Sandstone, v. fn to med. gn., friable, grading into siltstone. Tarry oil increasing. V. slight slow gas and oil on pits.
4300-10	Shale and mudstone, variegated, w/s/ mottled grn & red sh. Ss, v. fn gn., friable, w/frosted, sub-rounded gns, A/B, common. Trace tarry oil.
4310-20	A/B.
4320-30	Shale, gry, blocky to fissile, w/s/maroon, green, silty, brown shale.
4330-40	Sh, A/B w/tr. mustard colored shale.
4340-50	Sh, maroon & gry, w/tr. tan Sh. Some v. fn. gn. friable Ss.
4350-60	A/B. Cavings, common. Dk gry-blk sh. is blocky.
4360-70	A/B, w/incr. in Ss, v. fr. - m. gn., friable, sub-rounded gns, wh, frosted.
4370-80	Sh and mudstone, A/B, w/s/grn-wh, bentonitic, fn gn Ss. Trace chert - brn, angular.
4380-90	Shale, maroon & gry, w/s/grn Sh w/s/Ss, pale grn, v. fn gn, shaley. Shales are calcareous and bentonitic, finely micaceous.
4390-4400	A/B w/tr. tar staining on several pieces.
4410-20	Shale, maroon & gray, with some Ss., gry-grn, m. coarse, with sub-angular gns, dirty, shaley, tite, calcareous binder. Tr. brn. calcite.
4420-30	Shale, maroon, gray, green and black, W/s/brown, waxy shale, with large brown ostracods. Trace veined chert. Ss, A/B, bry-wh, fn gn, well sorted, calcareous, rare to common.
4430-40	Shale and mudstone, A/B, w/s/Ss, A/B.
4440-50	Shale and sandstone, w/pyrite clusters, rare.
4450-60	A/B, w/s/olive shale, common. Mudstone, common. Some ppl. Sh, rare.
4460-70	A/B.
4470-90	Ss, gry, fn gn, well sorted, calcareous, drilled fast, had gas to surf., 10' flare yellow-orange flame thru 4½" blooey line. Some gry sltstn & sh, A/B. Ss has faint yellow fluor. and gives pale yellow fluor. ring when cut with acetone, under U.V. light.
4490-4500	Sh., A/B.
4500-10	Sh., A/B, w/considerable fn gn, free floating Ss. Added "dusting powder" to dry up hole. Drilling & dusting.

4510-40	No Samples
4540-60	Shale, maroon and dk. gry, w/s/lt, gry micac, Sh and some grn-red mottled sh.
4560-70	Sh, A/B, w/ss, wh, med gn, w/clay binder, sl. calc., w/frosted sub-angular gns, rare. Tr. sh, black, carbonaceous
4570-80	A/B, with shale, black, waxy, oily appearance, common. Gives blue-yellow flour. under U.V. on spot plat when cut w/ acetone. Dead oil, black, coating few pieces grn, waxy sh.
4580-90	Sh, maroon, gry, grn w/tr. tarry particles in shale matrix Tr. siltstone
4590-4600	Sh, A/B, w/ trace black, waxy Sh. Few rounded globules with metallic sheen, but brittle and carbonaceous when broken open. Siltstone increases.
4600-10	Sh, A/B, w/s/ss, wh, med gn, sub-ang., w.clay binder and w/black carbonaceous material, yellow flour. & pale yellow-blue ring on spot plate under UV. lamp
4610-30	No Samples
4630-40	No Samples
4640-50	SS, wh, fn med gn, w/black carbon flecks, some Sh, A/B. Considerable "tar" on water after washing samples. Mostly floats off.
4650-60	Sh., m. to dk. gry, w/s/brick-red, sandy to bentonitic Sh and some pale grn-wh Sh. SS, A/B, common. Tarry flakes, common.
4660-70	A/B, w/incr. in gray bentonite. Tr. calcite and pyrite. Tar globules and flakes common. Pipe stuck at 4671. Backed off and fished. Converted to gilsonite base drilling mud.
4670-80	Sh, red, grn and gry, w/ss, med gn, wh, grn and brown, sucrosic to clayey. Tr. Ls, tan xln, Some bentonite, brown and pale green. Trace soft, tarry oil. Drilling with gilsonite mud.
4680-90	Shale, green, red and brown. Soft, clayey to bentonitic, with considerable amount SS, wh, fn to med gn, friable, sucrosic. Tar, v. common. Gives pale bluish-yellow cut and flouresecence. Tr. Ls., tan, xln, bentonitic, tan, common.
4690-4700	SS, gry and wh, fn to med., v. calc., poorly sorted. Tr. Ls., brn, oolitic to pisolitic. Some shale, as above
4700-10	Ls., tan, finely xln to sucrosic, massive, w/SS, A/B v. common. Some Sh, A/B, trace chalcopyrite.
4710-20	SS, gry, m. gn, v. calc., tite, grading into SS, gray, fn gn, calc., silty in part, limestone, as above, v. common, tan & brown, sharp, angular.

4720-30 Limestone, brown & tan, v. finely xln to dense, w/ss, A/B, Common. Some Shale, brown & gry. Pyrite rare.

4730-40 Shale, black, fissile, ostracodal & sh, brn & gry, w/s/ Ls&ss, A/B. Trace red chert.

4740-50 Shale, black, grey & dk brown, w/ss & Ls A/B, v. common Trace red chert, A/B.

4750-60 Sh, black, A/B, w/ss, f. to cse gn, tite, calc. poorly sorted vitreous, trashy & w/s/ Ls, gry & brn, dense, A/B

4760-70 As above.

4770-80 Sandstone, brown, med gn & ss, wh to brownish-white, fine to cse gn, vitreous, calc. w/frosted and clear gns, poorly sorted, w/ black flecks, calcareous. Some sh, A/B. Some Ls, A/B.

4780-90 Shale, black, and gry, w/ss & Ls, A/B v. common tr. blk. chert.

4790-4800 A/B w/ sh, brn, calc, ostracodal. Increase in ss & Ls, A/B.

4800-10 A/B

4810-20 Shale, black & gry, finely micaceous, w/ Ls & ss, A/B v. common Siltstone, gry-grn, common. Some red and brn sh.

4820-30 Shale, A/B with brn, dense Ls, common. Ss decreases to 10

4830-40 Shale, black, fissile, brotitic, w/s Ls, brown & tan, finely granular, sharp, and ss, gry, fn, dirty to wh., cse gn, s & p, w/ frosted, sub-rounded grains.

4840-50 A/B w/ incr. in Ls, wh. dense, cherty., & incr. in ss, brownish-black, speckled, dirty.

4850-60 Siltstone, brown, grading into fngn ss, well sorted, silty. Shale, A/B, v. common. Ls & ss, A/B, common.

4860-70 Siltstone, gry, shaly, grading into fn gn ss, silty to calcareous, tite. Some Ls & sh, A/B.

4870-80 Siltstone, gry, hard, calc. grading into fn gn ss, A/B. Tr. brown chert. Some gry, black & brown, fissile shale. Ss, wh medium to cse gn, s & p, w/ pink frosted gns, poorly sorted, calcareous, vitreous, rare.

4880-90 Sandstone, white & brown, med to coarse, s & p, vitreous, tight, with frosted and clear rounded to angular grains w/ s/ ss, gry & wh, fn gn, Sucrasic, A/B. Some black fissile, sh, brown Ls, A/B.

4890-4900 Shale, black, fissile to blocky, slightly pyritic, in part, and ss, wh, gry, vitreous to sucrosic, silty to calcareous, w/s/ Ls, A/B.

4900-10 Ss, gry, fn gn, silty & gry - wh, med gn, well sorted, calcareous, with some ss, med to cse gn, vitreous, w/ smoky & brown, rounded to angular gns. Some sh, A/B, Ls, brn, A/B. Trace chert, gry, milky & orange.

4913 Drilling break from 8-10"/ft. to 2-3 min/ft. Circ. for samples. Drilled 5', circulated. Poor sample. Total gas to 80 units. Drilled 5' to 4918, circulated. Gas to 140 units, drilled sample 2-3"/ft. Shows ss, A/B, becoming v. pyritic. Ss, wh, med. & md cse, S & P, w/ clear & frosted, sub-rounded gns, with white lime matrix appears. After 50" circulated sample (lag time: 50") shows ss, S & P, med cse, A/B and ss, gry, and brn. v. fn to fn gn, sucrosic to silty, in part brown & wh, speckled trace orange chert& coiled gastrapod. Pyrite, rare. Trace ss, brn, med. fn gn, trashy, with fragmental organic remains.

4922 Circ. 20 min. Ss, gry, med gn, calcareous, w/s/ brn & gry, fn gn ss, A/B. Sh, A/B, common. Ls, A/B, common. Chert, orange-brown, common.

Circ. 40" A/B w/ incr. in Ls, wh & brown, platy, chalky, Incr. in pyrite & brown chert. Rouge-like material possible vein filling.

Circ. 50" Ss, friable, free-floating fn to cse gn, frosted to clear, w/s/ large pink gns, w/s/ sh & ss A/B tr. platy, brn-wh chert. Some Ls & sh, A/B

4920-30 Ss, wh, S & P med. gn w/ wh lime binder, w/s/ wh clay, soft, tr chert, orange.

4930-40 As above, w/s/ ss, wh, cse gn, w/ frosted, subangular gns. Some shale, black, & Ls, tan & brown.

4940-50 Shale, black, gry, finely mic. w/s/ brick-red sh. Some ss, A/B.

4950-60 Ss, wh, med cse gn., pyritic, in part w/ sh. A/B

4960-70 Sh, blk & gry, w/s/ss, A/B

4970-77 A/B

4977 Ss, wh, med. to cse gn, w/ sub-rounded to well rounded, frosted gns and w/s/ angular, sharp, friable, free-floating, clear gns. Drilling break.

4977-80 A/B, w/tr. pyrite & w/s/ blk. & brick-red sh.

4980-90 Sh & Ls, A/B, w/s/ss/A/B. Ss, gry, wh, fn gn,well sorted, calc., hard, tite, common.

4990-93 Ss, wh, S & P M to cse gn, w/angular to sub-rounded, interlocked gns. White lime binder. Ss, V. fn gn, gry & gry-grn calc. common.

4993	Circ. 50 minute sample. SS, A/B, 10 unit gas show.
4993-4999	Sh, A/B, w/ss, A/B
4999	Circ. 25 minute to sample. SS, wh, med fn gn, well sorted, and wh, fn gn, well sorted w/ visible porosity, sucrosic.
4999	Circ. 50 minute, SS, CSe gn, friable, w/ rounded to ang., clear to frosted gns.
5000-5010	Shale, black fissile, gry, brown & brick-red, w/s/ss, A/B Chert, orange, common. Ls, tan, common.
5010-5020	Limestone, brown, v-finely granular, hard, dense, blocky w/sh gry, black, brown and red. Some SS, A/B, Chert shards, milky, wh, common.
5024	Circ. sample, 50 minute, ss, wh, S & P m to coarse, poorly to very poorly sorted, w/ sub-angular gns, frosted to clear vitreous in part, w/s/visible porosity. Tr. ss, wh, fn gn, well sorted w. good porosity.
5024-5030	Shale, black, v. fissile, w/ some ss, A/B, Ls, brn, fnly xln, plate, common.
5030-5040	SS, wh med gn, well sorted rounded gns. w/s/black flecks, w/ visible porosity, and ss, med CSe gn, w/sub rounded to angular gns, w/ clear to frosted gns. w/few brown-pink gn s, vitreous appearance, sharp puritic in part.
5040-5050	Shale, black and gry, w/s/Ls, brn, A/B. SS, wh, med gn, S & P, fairly well sorted, tite, w/sub-rounded gns, calc. common.
5050-5051	Circ, sample 25 min. ss, wh, S & P, med to med CSe gn, poorly sorted tite, w/ sub-rounded frosted to clear gns. Few green grains ss in matrix.
5051	Circ. 50 minute sample. SS, wh, med, CSe gn, S & P, A/B w/wh. lime binder
5051-5060	SS, A/B, w/sh. black and gry
5060-5066	Sh, A/B, w/ss/A/B. common
5066-5076	SS, wh, fn to med., S & P, calc, tite
5076-5087	Core No. 1
5076-5088	Cut 11.0', recovered 7½' top 2.0', ss, wh fn to med gn, S & P calc, tite, w/s/porosity, w. few green and pink gns. Rest of core was sh, black, dense, hard, S/calc, w.s.sdstn, grn-gry, shaley, no porosity and interbedded w. shale.
5087-5090	Siltstone, grn-gry, finely sandy to shaly, sl. calc., dense grading into ss, grn-gry, sucrosic, dense, v. fn gn, shaly tite, n.s., no odor, finely micaceous, c. sl calc.

5090-5100	Sh, A/B, w/s/ss, A/B, Ls, brn, dense, rare cavings, v. common
5100-5110	Sh, A/B, w/s/ss, A/B/ Cavings, v. common 6" drilling break at 5100'.
5110-5120	Shale, balck and gry, in part finely micaceous, with ss, A/B common.
5120-5130	A/B
5130-5140	SS, wh, fn gn, hard, tite, calc. no show gas or flourescence Good drilling break. Some shale & ls, A/B.
5140-5150	Shale, black, A/B, w. much ss, A/B & ss med to med s-CSe gn, S & P, w/wh. Ls. binder, sub-angular gns, No show.
5150-5160	Sh, black, gry & brick -red, w/s/ss, A/B
5160-5168	Sh, med gn, soft, waxy, ostracadal, w/s/brn, blocky sh & w.s.Ls, brn, dnese
5168-5170	SS, gry, v. fn gn, sucrosic, hard, tite, calcareous.
5170-5180	Sh, med gry, w/s/brn-gry, sh, w/ shell frag. Tr Ls, brown, lith. Some ss, A/B.
5180-5190	SS, wh, med to CSe gn Ca;c, S & P, w/ sub-rounded gns, friable shalky. Some sh, blk, fissile to blocky & some brick-red sh, siltstn, gry, common.
5190-5200	Shale, med gry, tan & black w/ss, A/B v. common. Chert, milky wh. common.
5200-5210	Sh, med to dk. gry, blocky to fissile, w/s/ss A/B. Some tan waxy sh & gry, siltstone.
5210-5220	Sh, A/B, w. incr in Sltstn and ss, A/B
5222 Circ. 30"	SS, brn & wh, speckeled, fn gn, chalky, w. tr. wh. megafossil. Some sh, A/B
5222-5230 Circ. 1 hr.	SS, A/B
5230-4240	Sh, black, fissile & gry, blocky, w/ gry siltstone, common. Some ss, A/B
5240-5246	Sh, lt. gry, waxy, w/s/brn, waxy sh
5246 Circ. 25"	SS, wh, med. gn, fairly well sorted, silty in part, w/s/porosity and w/s/tite, interlocked vitreous ss. Some ss, gry, fn gn, sl sucrosic, well sorted ss. Good gas show, but dropped out fast. Showed methane, ethane and tr, propane.
5246 Circ. 40"	SS, brn, fn gn, well sorted, w. wh. lime binder
5246 Circ. 1 hr.	Coal, sub-bituminous

5246-5250 Sh, SS and Coal, A/ B.

5250-5256 Sh, black, fissile and dk gry, w/s coal. Some SS, wh. A / B
Pyrite, common. Tr. LS, Tan, platy.

5256 Sh, brn and brn-gry, splintery, fissile
Circ. 25"

5256 Sh, blk, carbonaceous, waxy to fissile, w/coal, sub-
Circ 40" bituminous rank, common.

5256-5260 Sh, A /B, w/S/SS, wh, med gn. A/B.

5260-5266 SS, wh, med CSe to fn gn, tite, chalky, w/s/sh, A/B
Circ. 55"

5266-5270 Sh, black, platy to blocky, and gry, finely micaceous, w/s/M gry waxy sl. Some SS, A/B

5270-5280 Sh, A/B, W/S/coal and SS, A/B

5280-5290 A/B, w/incr. in SS, wh med. to med CSe poorly sorted, S and P, w/sub-rounded gns. com. w/wh. lime

5290 Sh, blk, carbonaceous, fissile to blocky.
Circ 30"

5290 Sh, blk, Carbonaceous, and coal. Some med. gry sh, finely micac.
Circ. 60"

5290-5300 Sh, blk, fissile, carbonaceous, coal, in part.

5302 SS. wh. m. friable, m. to CSe gn, w/sub-rounded to rounded frosted and clear gns.
Circ. 60"

5302-5362 Core No. 2 Cured 62.0'. Full recovery

5362-5380 Sh, blk and gry, A/B, W/S/SS, A/B

5380-5382 Sh, A/B

5382-5388 SS, Wh, med gn, S and P, W/wh. clay binder, W/S/ gry Siltstone
Circ. 42 min.

5388-5390 Sh, black carbonaceous, W/S/SS A/B

5390-5400 Shale, black, fissile, carbonaceous, W/S/SS, A/B

5400-5410 Shale, A/B, W/S/ thin inter-bedded SS, A/B

5410-5420 A/B, W/incr. in SS.

5420-5431 SS, wh, Cse gn, W.S. fn gn wh SS.

5431-5484	Core No. 3
5484-5490	Sh, black, carbon, w/s/ss, A/B
5490-5494	SS, gry, fn-med fn gn, w/s/sh, A/B
5494-5500	Sh, A/B, w/ss, A/B
5500-5510	SS, gry and wh, fn gn to med gn, S& P, A/B, with trac interbedded black and gry, carbonaceous shale
5510-5530	Sh, black, fissile, w/ss, A/B, v. common.
5530-5540	SS, wh, v. fn gn to fn gn, w. wh clay binder. Sh, blk, A/B, v. common. Limey clay-gouge like material w/ slicken siding (?) common.
5540-5545	Sh, A/B, W/S. SS, A/B
5545-5555	SS, brn-wh, med gn, S and P, "Speckled" appearance chalky, in part, w/s/sh, A/B.
5555-5565	Sh, A/B
5565-5575	SS, wh, fn to med CSe, poorly sorted, tite, Calcareous friable
5575-5580	Sh, black, fissile
5580-5590	Sh, A/B, w/ss, A/B, v. common
5590-5604	Sh, black, carbonaceous, coaly, w/s/ss, wh, med CSe gn, S & P, poorly sorted, tite
5604-5608	SS, gry, S & P med CSe gn, hard tite, w/interlocked gns. w/s/brn med gn trashy to silty ss.
5608-5610	Shale, black and gry, carbonaceous. w/s/wh. CSe gn S & P SS w/s/brn, med gn, trashy to carbon. SS.
5610-5630	Sh, ss, interbedded, A/B
5630-5659	SS and Sh, A/B, interbedded
5659-5666	SS, fn med and CSe gn, wh and brn, gry and brn-black, hard tite, Calc. to silty and carbonaceous, S & P.
5666-5675	Sh, blk, carbonaceous, coaly, w/s/Ls. grn-gry, dense and w/s/ss. A/B. tr. coal
5675-5683	Sh, black, A/B, w/s. ss brn, med CSe, vitreous, w/s wh S & P, w/s/Ls. A/B coal, common Gilsonite from lube flow heavily contaminating samples
5683-5694	SS, wh and gry, med to med CSe gn, S & P, w/s/ sh, A/B tr. chert, wh.
5694-5703	Sh, blk, carbon, coaly, A/B

5703-5712	SS, Wh, med CSe gn, S & P, hard tite w/interlocked gns, no show
5712-5725	Sh, black, carbonaceous, w/s/gry, interbedded, siltstone
5725-5731	SS, wh, med to CSe gn, S and P, tite, no show
5731-5740	Shale as above
5740-5750	SS, wh, and brn med to warm, w/clear, frosted brown gns angular to subrounded, poorly sorted, no show w/s/ gry, med. fn gn, silty, tite SS
5750-5755	Sh, A/B
5755-5770	Sh, black, carbon, w/s/ gry siltstone, Calc, and w/s/brn dense Ls.
5770-5775	SS, wh, med to CSe gn, S & P, Calc. tite
5775-5795	Sh, black, carbon, coaly, in part, non-calc. w/s/ ss and ls, A/B
5795-5800	SS, wh, med CSe gn, tite, vitreous, S & P, w/ frosted and clear gns.
5800-5805	Sh, black, carbon
5805-5810	SS, wh,brn-wh, S and P med CSe gn, tite
5810-5820	Shale, A/B
5820-5830	Shale, w/ss, A/B
5830-5840	Shale, w/interbedded SS, wh, brn, brn-wh, S and P med to CSe gn, vitreous, hard, tite. Some coal interspersed in shale. SS is calcareous
5840-5850	As above, w/s/brn-wh, mottled, soft, chalky limestone
5850-5860	Shale, black, carbon, fissile
5860-5869	Sh and ss, A/B
5869-5881	SS, wh, fn gn, well sorted, calcareous, tite, w/s wh, m gn, S & P, SS;
5881-5921	Sh, black, carbon, w/s/gry and brn sh
5921-5934	SS, wh, fn gn tite, calc., w/s/med gn, S & P and w/s brn, med CSe vitreous, tite ss, V. calc
5934-5937	Sh, blk, carbon, A/B
5937-5956	SS, wh, to M. fn gn, S and P calc., w/s/ss tan, m. gn citreous and A/B fn gn and wh. calc. ss
5956-5966	Sh, blk, carbon

5966-5996	SS, wh, fn and m. fn gn, Sl. calc. to calc, well sorted w/s/gry, m fn gn, carbon, SS, Calc. Incr. in SS med. to m. CSe gn, S and P at 90-04
5996 Circ. 20"	SS, wh, m. CSe gn, S and P, Calc, slightly Glauconite, tite, w/s/fn to m. gn tite, wh. S and P ss, calc.
5996 Circ. 40"	SS, wh, gry. i tan, Calc. to silty, carbonaceous, m. to fn gn, ti.., pyrite, rare
5996 Circ 70"	SS, wh, fn to m. gn, S and P Calc., tite
5996-6000	Shale, black, carbon
6000-6013	SS, wh, med to med CSe, S and P, glauc., Sl. calc, tite, Some brn, med gn, S and P, SS and some gry carbon poorly sorted, trashy SS
6013-6025	Sh, black, fissile, carbon, A/B, w/s/ss, A/B. Sh has thin coal partings
6025-6034	SS, tan, fine gn, surcrosic, friable, w/s/brn med gn S and P, ss, and wh, S and P, Calc. ss. Some sh, A.B, coaly in part.
6034-6060	Sh, black, carbon, fissile, and gry, finely micac. A/B, SS, brn med gn, S and P, A/B, common. Incr. in sltstn, gry.
6060-6075	Sh, blk, carbon, w/coal partings, micac. fissile, w/s/gry, fissile and w/s/gry, hard, tite, calc. sltstn.
6075-6084	SS, wh, fn gn to v. fn gn, well sorted, S and P, Calc tite, w/s/visible porosity, Sl. carbonaceous, in part. Some med. gn wh S and P SS. Gas show to 180 units.
6084-6086	Sh, blk, carbon, fissile to blocky w/s/gry Sl.
6086-6104	SS, wh, fn gn, calc, S and P, well sorted, w/s/med gn, S and P, calc. SS, tite. Gas show to 180 units.
6104-6110	Sh, black, fissile, carbon
6110-6120	Sh, A/B, w/ss, A/B, v. common. Probably interbedded. Some gry, calc. sltstn, blocky
6120-6130	Sh, black, platy, fissile
6130-6140	Sh, black, and gry, fissile, tr. caol. Some ss, A/B
6140-6150	A/B, w/s/interbedded gry, v. fn gn ss and Siltstone.

6150-6160	Sh, blk, carbon, fissile to blocky W/S/med gry, silty to finely sandy sh. Some SS, A/B
6160-6170	A/B W/ incr in SS, wh, fn to med gn, S and P calc, tite
6170-6180	SS, wh, fn gn, S and P, well sorted, tite, calc. W/S/med gn S and P SS, A/B. Trace coal and Sh. Blk, carbon. Gas show to 160 units. No good drilling break.
6180-6195	Sh, blk, fissile carbon, A/B. Coal rare to common
6195-6200	SS, wh, fn gn, hard, tite, Calc, well sorted, S and P
6200-6225	Sh. Blk, fissile, coaly in part, W/ some thin interbedded SS stringer.
6225-6230	SS, grn, v. fn gn, hard, tite
6230-6233	Sh, blk, A/B
6233-6234	SS, A/B
6235-6240	Sh, blk, carbon, A/B, coaly in part
6240-6250	A/B
6250-6255	Sh, A/B W/ LS, brn, finely Xln, dense, blocky, common.
6255-6266	SS, wh, fn gn, Well sorted, Calc., tite, W/ 220 units gas kick (background gas: 30 units) and good drilling break.
6266-6280	Sh, A/B
6280-6290	Sh, A/B W/ incr in SS, wh, fn-m gn, S and P, vitreous, tite Calc.
6290-6310	A/B
6310-6330	Sh, med gry and black, fissile, W/S/SS, A/B
6330-6350	Sh, blk, fissile, coaly in part, W/S/ dk gry - blk. Siltstone.
6350-6360	Sh, A/B, W/S/ thin Coal Stringers
6360-6370	Siltstone, gry to gry blk, grading into fn gn SS. Shale, blk, carbon, common. Tr. LS, gry, dense.
6370-6380	Sh, blk, carbon, coaly in part, A/B, W/S/Sltstn, A/B
6380-6385	SS, gry, fn gn, Sl. Calc. Well sorted. tite, W/pale blue fluor, Gave slow cut in acetone
6385-6390	Sh, blk, carbon, A/B, W/S/ coal. Some gry-wh fn gn SS W/fluor, A/B

6390-6420 shale	Sh, black, carbon, coaly w/s/ss, A/B. Some med. gry
6420-6435	A/B, w/s/ls, gry, v/ fn gn, dense, blocky, lithographic
6435-6437	Coal, sub-bituminous, gassing, 250 units methane
6437-6440	Sh, blk, carbon, A/B
6440-6450	Sh, black, carbonsceous, coaly
6450-6460	A/B, w/ incr. fn ss, fn gn, S & P, hard tite, Sl Calc. w/ gry, v. fn gn, well sorted, hard, tite v. Sl, Calc, ss, Tr. Ls, gry, dense, massive
6460-6480	A/B
6480-6490	Shale, blk, carbon, W/2' bed of coal, 6486-6488. Some gry sltstn, hard.
6490-6500	Sh, blk, carbon coaly and Sh, m. gry, w/interbedded SS and sltstn. SS is gry and wh, fn gn to v. fn gn, S and P, Sl. Calc. Sltstn is gry, carbonaceous
6500-6510	SS and sltstn, A/B, w/s/sh, A/B, Coal common
6510-6520	SS, gry-wh, v., fn gn, well sorted, tite, w/s/sh, fn gn, S and P, tite, SS. Tr. SS, v. fn gn, green. Sltstn, gry, hard, A/B, carbon. Coal, rare to common
6520-6530	Sltstn, gry, v. hard and tite, grading into gry, v. fn gn SS, hard tite, Tr. ls, M. gry, dense, lithographic
6530-6531	Coal, sub-bituminous
6531-6534	Sltstn, A/B, w/s/ chalky ls and ss, A/B
6534-6540	Shale, black, carbon, w/s/thin coaly stroaks., Sltstn gry, hard, tite, A/B, common. Some med gry, shale
6540-6550	Sltstn, dk gry, hard, tite, w/s/ss and sh, A/B, Coal common.
6550-6559	Shale, blk, carbon w/thin coal streaks. Some sltstn SS, A/B
6559-6574	Sltstn, gry-wh, vitreous, Calc. w/gold-yellow flourescente, hard, tite, Drilling break, 6559-6574. Limestone, brown, glassy, sharp, grading into Sltstn.
6574-6580	Shale, black, carbon, coaly, with some sltstn and Ls, A/B. Some med gry Sh.
65806600	As Above
6600-6630	Sh, black, carbon, coaly in part, w/s/ m. gry silty shale ss, gry, v. fn gn, w/s/peices w/ pale blue flour., faint to good cut. Some SS, gry-wh, fn gn, S & P w/pink gas. Few pieces tan-gry, dense Ls at 6620-30.

6630-6646	A/B W/incr. in SS, wh-gry, fn gn to v. fn gn, W/S wh. med fn gn S and P SS W/clay binder
6646-6659	SS, gry, carbonaceous, v. fn gn, hard, tite, W/ few pieces W/ blue flour., faint cut. Some SS, wh, med fn gn, S and P, Shale, A/B, v. common.
6659-6670	Shale, m. gry, W/S/ dk gry and W/S/ blk. Carbon. Sh, partly coaly. Some SS, wh, med fn gn, S and P W/ brn and pnk gns scattered throughout. Some gry, v. fn gn well sorted, tite SS and Sltstn.
6670-6689	Shale, m. gry, A/B, W/ incr in Sltstn, fn gn, gry
6689-6702	SS, gry-black, carbonaceous in part, fn gn, silty to Shaly, in part, tite
6702-6710	Shale, black and gry, carbonaceous, coaly, in part, fissile to blocky, W/S/ fn gn gry SS, A/B
6710-6720	Shale, black and grav, fissile to blocky, W/S/ gry Sltstn and SS, A/B
6720-6734	Shale, brn-gry, finely micac. fissile, W/S. Sh, A/B Coaly in part.
6734-6740	SS, gry-wh fn gn, carbonaceous
6740-6755	Shale, black, m. gry and brn-gry, finely micac, W/ incr in coal and decr. in SS, A/B
6755-6760	Sandstone, gry-wh grading into v. fn gn sltstn. Gas in mud to 300 units from 100 units background. Drilling time to 7"/ft. as against 15-18"/ft. for shale. Gas stayed in 6755-6767'.
6760-6785	Sandstone, gry-wh, fn gn, W/S/ med gn wh S and P SS W/ wh clay binder. Thin stringers. Shale and wh. Clay and coal. Gas dropped out 6767-6790'.
6785-6788	Sh, blk, carbonaceous, W/S/ gry and wh. Soft claystone
6788-6810	SS, gry-wh, fn gn, calcareous, W/S/ med gn wh S and P SS. Coal, common, Some wh. clay
6810-6827	As above
6827-6830	As above
6830-6853	Sh, blk, and gry, carbon, A/B, W/S/fn gn SS. A/B. Abundant light gray, soft sh.
6853-6855	Coal, Sub-bituminous
6855-6890	Shale, med gry, soft, bentonitic and sh. blk, fissile, v. carbon, W/S/ coal Stks. Some gry-wh fn gn SS, A/B. Trace calcite, 6870-6880.

6900-6905	Sh, black carbon, fissile, W/S/ m. gry sh.
6905-6915	SS, gry, wh. fn gn, carbonaceous in part, S and P, hard tite, W/ few pieces W/ pale blue flour. and cut Some mf to m, wh, S and P SS, tite, W/ few pink gns, wh clay binder
6915-6935	Sh, black, carbon, A/B, W/ considerable SS, a/b
6935-6994	Core No. 5, 6935-6994 Cut 59.0 feet, full recovery
6994-7053	Core No. 6, 6994-7053, cut 59.0 feet, recovered 59.0 feet
7053-7060	Shale, black, carbonaceous, and dk gry, silty W/ streak coal at 7057
7060-7070	SS, wh, fn gn to v. fn gn, Silty, calc. tite, S and P
7070-7130	Core No. 7, 7070-7130, cut 60.0 feet, full recovery
7130-7190	Core No. 8, 7130-7190 cut 60.0 feet, recovered 60.0 feet
7190-7223	Core No. 9, 7190-7223, cut 23.0', recovered 21.0'
7223-7230	SS, wh, fn gn, S and P,, hard tite, W/flourescent dull gold-green v. blue cut
7230-7235	SS, gry-wh, S and P carbonaceous, fn to med gn. tite, W. flour. A/B
7235-7252	Sh, black, fissile, Depth correction-Schlumberger: 7236-7243
7252-7259	SS, gry wh, v. fn gn S and P, Carbon, W/ tr. flour, grn-yellow and good cut. Some med. gn SS gns Common in matrix, Lost circ, 7257.
7259-7288	Core No. 10, 7259-7288. Cored 29.01 feet. Rec. 29.0 feet. T.D. 7288

CORE DESCRIPTIONS

Core No. 1, Interval 5076-5088. Cut 11.0'. Recovered 7.5'.

5076-78.3	SS, wh, fn to med. gn, S and P, Calc, tite, W/S/ porosity, Few pink and grn gns.
5078.3-5088	Shale, black, dense, hard. Sl. Calc. W/S/siltstn, grn-gry, shaly, tite, W. interbedded shale

Core No. 2 Interval 5302-5362. Cored 62.0'. Full recovery.

5302.0-5304.5	SS, wh, fn to med. gn, poorly sorted, S and P, Calc. W/mica flakes
5304.5-5305.0	SS, med. gry, shaly, silty, Micac, Calc,
5305.0-5306.0	SS, lt gry, fn - med gn, Calc, hard dense
5306.0-5707.0	SS, fn gn, med gry, calc. Sl. shaly to silty, Calc.
5307.0-11.0	SS, CSe gn, W/S/ med gn, SS, W/wh clay binder, Salt and pepper. Grains are frosted, sub-rounded to angular, W/S/ clear gns. Few pink gns.
5312.0-16.0	SS, wh, v. CSe gn, S and P, W/ sub-rounded angular gns, v. friable, W. few pink gns, W/ wh clay binder, tite.
5310.0-17.2	Sh, black, fissile, carbonaceous W/ thin coal streaks
5317.2-18.5	Sh, med gry, silty to sandy, finely micac.
5318.5-19.0	Sh, black, carbonaceous, "poker chip"
5319.0-22.0	SS, gry-wh, fn gn, well sorted, tite, calc, finely micac, W/S/ black flecks, becoming finely laminated with carbonaceous streaks. 5321.4-5322.0
5322.0-23.2	SS, gry-wh, m. - CSe gn, poorly sorted, tite, friable, W/ blk. Carbon flecks, v. calcareous.
5323.2-24.0	SS, wh, fn-med gn, A/B, tite
5324.0-25.1	Sh, blk, carbon, "poker chip".
5325.1-27.3	SS, gry, v. fn to gn gn, calc., 10 % porosity
5327.3-28.0	SS. dk gry, v. fn gn, carbonaceous, Sl. Calc., grading into siltstone
5328.0-30.0	SS, wh, fn gn, sucrosic, well sorted, Calc., W/ carbonaceous mat., grading into lamented SS and Siltstone tite

54

5330.0-31.1	Sh, brnish, black, fissile to waxy, resinous
5331.1-34.0	SS, wh, fn gn, well sorted, sl. Calc. finely S and P, laminated in part, tite
5334.0-35.0	SS, dk gry, m to fn gn, silty to calc [illegible], shaley in part, tite
5335.0-36.0	Siltstone, dk gry, sand to shaly, carbonaceous
5336.0-38.3	Siltstone, light gry, v. finely arenaceous and carbonaceous, tite, grading in part into v. fn gn SS, Sl. Calc.
5338.3-39.2	SS, wh, laminated W/ blk carbon, stks, v fn gn, silty in part
5339.2-40.0	SS, wh, med gn, S and P, W/ wh clay cement, fairly well sorted
5340.0-41.0	SS, wh. CSe gn, W/few brn gns, w/wh clay binder
5341.0-42.0	SS, med. gry, V. fn gn , well sorted, hard tite, v. finely carbonaceous, Sl. Calc, grading into siltstone
5342.0-43.0	Sh, black, carbonaceous, "poker chip", non-calc.
5343.0-43.8	SS, gry, v. fn to fn gn, poorly sorted, finely carbonaceous
5343.8-46.2	Sh, blk, dense, carbon, A/B, non-Calc, grading into med. gry sh at 5345.5-46.5 and blk sh 46.5-49.2
5346.2-51.8	SS, gry, fn gn, carbonaceous
5351.8-	Siltstone, dk gry, finely sandy, in part
5351.0-53.4	SS, wh, med gn, well sorted, W. wh, clay binder, Sl. carbonaceous, massive. Few orn gns, friable
5353.4-54.0	Sh and SS, interlaminated, grading into v. fn gn wh carbonaceous Ss.
5354.0-57.3	SS, wh, S and P m. to m Cse gn, W/wh clay binder, W/S/glauconite (?) W/ few pink gns.
5357.3-58.0	Sh, gry, blk, dense v. finely sandy, grading into siltstone
5358.0-60.0	Siltstone, m. gry, finely sandy, grading into SS, gry-wh, fn gn, laminated at 5359.0-60.0.
5360.0-62.0	SS, wh, v. fn gn, well sorted, dense, carbonaceous from 61.5-62.0.

CORE NO. 3	Cored 5431-5484, Cut 53.0'. Full recovery
5431.0-37.4	SS, wh, med to CSe gn, S and P, W/ wh clay binder and frosted, sub-rounded gns, W. some clear gns and W/ S/ pink and brn gns, friable.
5437.4-38.2	Sh, black, fissile, carbonaceous, W/ thin coal streaks
5438.2-42.0	Siltstone, med gry, carbonaceous, hard, dense, v. finely sandy, in part.
5442.0-44.8	Shale, med to dk gry, silty to v. finely sandy, carbonaceaous dense, fissile
5444.8-46.1	Limestone, med gry, v. sandy, grading into SS, v. fn gn, limey, hard dense
5446.1-46.9	Shale, gry, dense, poker chip
5446.9-50.2	Sh, black, dense, blocky, carbonaceaous
5450.2-52.2	Sh, gry, dense, silty, grading inot sh. black finely sandy, blocky
5422.2-53.7	Siltstone, med. gry, dense hard, grading into v. fn gn SS, in part
5453.7-5454.0	Sh, black, fissile, carbonaceous
5454.0-5454.8	Siltstone, med gry
5454.8-59.5	Sh, black, carbonaceous, fissile
5459.5-60.0	Sh. med gry, silty
5460.0-64.5	Sh, black, carbon, blocky to fissile
5464.5-65.1	Siltstone, light gry, finely sandy, in part carbonaceous
5465.1-66.3	SS, gry, v fn to med gn, silty
5466.3-69.2	Sh, med, gry, dense, fissile to blocky, carbon
5469.2-75.3	SS, wh, fn gn, Sl. micac., calcareous, tite, fairly well sorted, friable, W/blk carbon flecks. Good odor gas and distillate. SS becomes med. fn gn at 74.0-75.1 and more friable
5475.3-77.2	SS, gry, med gn, tite, silty W/ interlocked gns, no porosity.
5477.2-81.9	SS, white, med to CSe gn, calcareous, S and P, W/ gas and distillate odor, with carbonaceous streaks and shale partings, v. common, becoming laminated W/ black shale at 5481.8
5481.9-82.2	SS, wh v. fn gn, silty, v. cabonaceous
5482.2-84.0	Sh, black, carbonaceous

56

CORE NO. 4	Cored with clubtrite bit and Bowen junk basket Cored 4, Cored 6823-6827, rec. 3 pieces SS, totaling ½'. SS, gry-wh, fn gn, Sl. Clac. W/wh clay binder. Yellow flour. and light pale blue-yellow slow cut.
CORE NO. 5	Interval 6935-6994 Full recovery.
6935-6936	SS, gry-wh, fn gn silty, calc. S and P, W/carbonaceous partings.
6936-6938	Sh, black, fissile, carbonaceous, W/Coal partings, silty.
6938-6945	Sh, m. gry, v. finely sandy, W/finely disseminated biotite flecks, 6940-6941. Shale is fissile to blocky becoming dakk gray at 6943.
6945-6946	Sh, black, silty to sandy
6946-6949	SS, wh, fn gn, S and P, Calc., tite, silty
6949-6950	SS, A/B becoming very carbonaceous, W/ thin black shale partings.
6950-6953	SS, wh, fn gn, S and P, Calc, silty, friable
6953-6955	SS, A/B, W/ carbonaceous, streaks, with shaley streaks and interbeddid SS and Sh at 6954-6955
6955-6956	SS, A/B, within coal partings
6956-6960	Sh, black, "poker chips:, within coal streaks
6960-62	Sh, dakr gry, Carbon, Coaly streaks fissile
6962-6963	SS, wh, fn gn, S and P, Calc. Silty
6963-6964	SS, A/B, W/interbedded black siltstone
6964-6966	SS, wh, fn gn, S and P, Calc silty, friable
6967-6968	Shale, black, fissile, highly carbonaceous, dense
6968-6969	Shale, med. gry, dense, silty
6969-6972	Shale, black, coaly, in part
6972-6974	Sh, med. gry to dk gry, W/S/ carbon Stks.
6974-6975	Sh, dk, gry, W/ carbon stks.
6975-6977	Sltstn, gry, carbonaceous
6977-6978	Shale, m. to dk gry, carbon
6978-6979	Sltstn, m. gry, carbon, finely sandy

57

6979-6980	Shale, m. gry, sandy to silty, carbonaceous
6980-6981	Sltstn, m. gry, v. finely sandy, carbon
6981-6982	Shale, black, dense, carbon
6982-6988	Shale, med. gry, dense, blocky to cherty, w/s/dk gry and blk dense shale
6988-6993	Shale, black, coaly
6993-6994	Sltstn, gry, dense, carbon, clac.
CORE NO. 6	6994-7053. Full recovery
6994-6995	Sh, black, carbon, silty
6995-6996	Sh, dk, gry, dense
6996-6997	Sltstn, white, S and P, grading into v. fn gn SS, Calc.
6997-6999	Sh, gry-blk, dense
6999-7002	SS, wh, S and P fn gn, silty, calc., tight, friable w/sh lime binder
7002-7004	SS, m. fn gn, S and P, silty, calc, friable, tight with wh, lime binder
7004-7005	SS, med gn A/B
7005-7009	SS, brown, m to fn gn, speckled with small white lime fragments and w. tr. milky angular chert in matrix, no cut, no flour., tite, becoming tan, 7008-7009
7009-7016	SS, wh, med, gn, w/sub-angular gns, tite, w/wh lime binder with black and gry particles. Few pink gns throughout matrix. Glauconite (?), common, SS is friable
7016-7018	Sh, black, w/ coaly streaks
7018-7019	Coal, sub-bituminous
7019-7021	Shale, coaly, A/B
7021-7033	Shale, black, v. finely sandy, coaly in part, very coaly 7022-7026, becoming hard, fissile, 7028-7032, becoming laminated 7032-7033.
7033-7034	Shale, A/B, laminated w. v. fine stringings v. fn gn wh SS
7043-7035	Sh, black, "poker chips"
7035-7042	Sh, A/B, grading into v. fn gn sltstn, w. sh laminations, hard, tite.

7042-7047	SS, gry-wh, fn gn, carbonaceous, with thin coaly shale partings, fn gn, calc. Silty.
7047-	Sh, blk, carbon, laminated, W/ interbedded v. fn gn wh SS., W/ coaly sh, 7049-7050
CORE NO. 7	Interval 7070-7130. Cored 60.0' Full recovery
7070-7072	Shale, black, carbon, fissile
7072-7073	Sh, A/B, W/ interbedded finely laminated, v. fn gn, hard, tite, gry SS
7073-7078	Sh, black, A/B, Sl. Coaly 7073-7074
7078-7083	SS, gry-wh, fn to m. fn gn, Sl. Calc, hard tite, with yellow-green flouresecent and good blue cut, 7078-7083 SS is silty, Sl micaceous, becoming carbonaceous and coaly, 7082-7083.
7083-7085	Sh, black, carbon, W/S/ interbedded fn gn gry-wh SS, A/B
7085-7086	SS, gry-wh, finely gn, hard, tite, Sl. S and P SS.
7086-7087	Sh, dk gry-blk, hard, fissile
7087-7088	Coal, Sub-bituminous
708807089	Siltstone, dk gry, v. hard, dense, tite
7089-7090	Shale, black, W/thin coal streaks
7090-7091	Sh. dk gry, W/ thin laminated Sh and SS stringers SS is gry-wh, v fn gn.
7091-7097	Sh, dk gry- blk, platy, becoming m. gry, fissile, W/ fine gn SS stringers 7093-7094.
7097-7100	Siltstone, dk gry, hard, dense, carbonaceous to coaly and shaley, grading into Sh, blk, A/B, W/fine gn wh SS stringers
7100-7106	Sh, dk gry, v. finely silty to sandy, blocky, grading to black, becoming coaly, 7103-7106
7106-7107	Sltstn, dk. gry, shaley, grading into silty shale
7107-7109	SS, wh, fn-med fn gn, silty, friable, Sl. Calc, S and P tite, no cut, gas show of 250 units.
7109-7110	Shale, black, sandy to silty, carbon, granular texture
7110-7120½	SS, wh, fn gn, silty, Calc., S and P, W/S/ carbonaceous streaks with grn-yellow flour. and blue cut. becoming coaly, 20½ - 21

7120½-7122	Coal, Sub-bituminous
7122-7124	Shale, black, with interbedded fn gn wh SS, laminated
7124-7125	Sh, black, coaly
7125-7130	Sh, black, Coaly, with interbedded fn gn SS, laminated.
CORE NO. 8	7130-7190. Cut 60.0'. recovered 60.0'.
7130-7131	Sh, black, carbonaceous, coaly
7131-7147	SS, gry-wh, V. fn gn to fn gn, silty, S and P, hard, tite, W/ shale laminations, with yellow-green flour. and streaming blue-green cut. Gave 320 unit gas kick against 150 background. SS is v. Sl. Calc. W. wh clay binder. Black shale inclusions, common. 7145-7147. SS breaks on shale partings.
7147-7149	Sh, black, carbonaceous to coaly, with interbedded gry-wh, fn gn, SS, A/B Shale is v. finely micaq.
7149-7160	Sh, black, waxy appearance, laminated, becoming gray-black at 50-51, with thin sandstone stringers, 51-54
7160-7164	Sh, dk gry, fossileferous, with branchropods remnants becoming v. finely sandy, 7161-7122, finely micac. 62-63.
7164-7165	SS, gry, fn gn, carbonaceous, silty
7165-7166	Shale, black, fissile, v. finely silty to sandy
7166-7169	SS, gry, v. fine gn, laminated W/ interbedded black micac. sh, hard, tite, silty, Core breaks on shale partings
7169-7170	Shale, black, waxy, micaceous sheen, with thin gry fn gn SS stringers
7170-7175	Sh, drk gray to gry-blk, fissile, with thin gry-wh fn gn SS stringers, 74-75
7175-7178	SS, gry-wh to white, carbonaceous, fn gn, W/ incr. in clear sub-rounded qtz gns versus milky qtz gns. Good gas odor. Gas readings to offscale. Good blue flourescent to 7184 with instant blue-yellow clot. SS is friable and v. slightly calcareous, with wh. clay binder.
7178-7181	SS, A/B with grain Size increasing to med. fn gn. with some med. gn sand. Few pale green, bright green and red gns. SS has some porosity and is non-calcareous, with white clay binder increasing as grain size increase SS is friable

7181-7184	SS, A/B, med gn, friable with flour. and cut A/B
7184-7190	SS, A/B, with gold-yellow flour. and cut., becoming very friable.
CORE NO. 9	7190-7223. Rec. 31.0' and piece of tool joint 3x4"
7190-7204	SS, wh, fn gn, S and P, hard, tite, W/ wh clay binder, with grn - yellow flour. and very good blue cut to 7204, slightly carbonaceous, in part, with vertical open fracture plane from 7198-7204. SS becomes v. fn gn 7200-7201
7204-7205	Sh, black, fissile
7205-7209	SS, wh, v. fn gn silty, with dull gold-green flourescent and good blue cut, from 7205-7221, becoming gray - white at 7206, carbonaceous in part, at 7207.
7209-7221	SS, gry-wh, fn gn, A/B W/ flour. and cut A/B
7221-7223	No recovery
CORE NO. 10	7259-7288. Cut 29.0.' Recovered 29.0'
7259-7268	SS, wh, v. fn gn, S and P, fn gn, glaucontic, W/ wh clay binder, bleeding gas. Green-yellow flourescent and blue cut, friable. Some patchy, carbon stks.
7268-7270	Shale, black, laminated, fissile
7270-7271	Shale, A/B, W/ thin laminated sandstone, stringers of v. fine gn gry-wh. SS.
7271-7275	Sh, black, carbonaceous, fissile, platy
7275-7288	Siltstone, gry-wh, W. carbon stks, hard, dense, tite
	T.D. 7288

DRILL STEM TESTS

DST No. 1: Interval 4886-4949. ISI 30". IHP 2322. ISIP 2081. Opened with strong blow. Gas to surface in 30". Burned with orange-yellow flame. Volume still building up at end of test, though had nearly stabilized. Max. gas : 132,000 cu. ft./day. IFP : 78, FLP 107, FSIP 2123, FHH 2306. Bottom 42' of anchor was plugged with cuttings.

DST No. 2A: Interval 5246-5362, pkrs. failed.

DST No. 2B: Interval 5176-5362, pkrs. failed.

DST No. 3: Interval 5372-5484. Tool open 5". Fair blow, increasing slightly. Shut in 30". Open 1 hr. Slight blow, decreasing to zero at end of test. Tool plugged. Misrun. Recovered 120' slightly gas cut water.

DST No. 4: Interval 5416-5494. Could not seat packer. Misrun.

DST No. 5: Interval 5678-5701. Open 1 hr. SI 30". Op. 11" and by-passed tool, op. 28" and bypassed tool. Tool plugged. Rec. 30' mud.

DST No. 6: Interval 5682-5690. Straddle packer test. Open 30", opened w/fair blow. ISI 1 hr. Open 2 hrs. FSI 1 hr. Rec. 250' sl. gas cut mud. IHH 2924 ISI 394 IFP 134 FFP 145 FSI 383 FHH 2924 BHT 165°.

DST No. 7: Interval 5943-5966. Pkrs. failed. Straddle packers.

DST No. 8: Interval 6079-6008. ISP 30" FSP 1 hr. op. 2 hr. IHP 3138 FHH 3128 IF 19 FF 28 ISIP 570 FSIP 583 BHT 164°. Opened with good blow for 45 min. Decreasing to fair blow throughout remainder of test. Recovered 65' of gas cut mud.

BIT RECORD

BIT NO.	SIZE	MAKE	TYPE	IN	OUT	FOOTAGE	HOURS	REMARKS
1	7-7/8	Reed	YT1AR	1371	1387	Used to clean out hole.		Cementing 4 plugs.
1RR	9-7/8	Reed	1RR	650	900	250	-	Reaming
1RR	9-7/8	Reed	YMR	900	1286	336'*	-	*Reaming
2	9-7/8	HTC	W7	1586	1520	234	29	
3	9-7/8	Reed	YS1R	1520	1889	369	40	
4	9-7/8	Reed	YTR	1889	2117	228	20½	
5	9-7/8	HTC	OWV	2117	2407	290	16	
6	9-7/8	Smith	SV2	2407	2569	62	7	Drilled on junk.
8	9-7/8	Reed	YTR	2569	2922	353	22	
8	9-7/8	Smith	K2P	2922	3193	271	14	
9	9-7/8	Reed	YHRA	3193	3365	252	12½	
1	6-3/4	Reed	YHRA	3365	3980	615	32½	
2	6-3/4	Reed	YHRA	3980	4375	395	24	
3	6-3/4	Hughes	W7	4375	4671	296	11½	Stuck pipe at 4671.
1	6-3/4	Reed	YH-R.R.	-		-	-	To wash to fish.
4	6-3/4	Reed	YH	-	-	-	-	To wash to fish.
5	6-3/4	Reed	YS1-R	3998	4016	18	-	Condition hole.
6	6-3/4	Reed	YM	3923	4691	20' new hole	-	Condition hole.
7	6-3/4	Smith	L4	4691	4711	20	12	Condition hole.
8	6-3/4	Reed	YS1R	4711	4749	38	9½	
9	6-3/4	Smith	K2P	4749	4831	82	18	
10	6-3/4	Hughes	OWV	4831	4949	118	17½	
11	6-3/4	Reed	YS1	4949	5076	127	17	
1	6-11/16	Christansen Diamond Core		5076	5087	11	-	
12	6-3/4	Smith	SV2	5087	5223	135	21½	
13	6-3/4	Reed	YS1R	5223	5302	[illegible]	-	Out for core bit.

BIT NO.	SIZE	MAKE	TYPE	IN	OUT	FOOTAGE	HOURS	REMARKS
1	6-11/16	Christansen	Diamond Core	5302	5362	60	-	Full recover Pulled to
3	6-3/4	Smith	SV2	5362	5431	69	11	core.
1	6-11/16	Christansen	Diamond Core	5431	5484	53	-	Full recover
RR	6-3/4	Hughes	-	5484	5494	10	-	Condition hole.
15	6-3/4	Reed	YS1	5494	5596	102	16	
16	6-3/4	Smith	SV2	5596	5701	105		
17	6-3/4	Reed	YS1	5701	5755	41	7½	Out for DST.
18	6-3/4	Smith	SV2	5755	5853	98	18½	
19	6-3/4	Reed	YS1	5853	5959	106	15½	
20	6-3/4	Hughes	OWV	5959	5996	37	3½	Pulled for DST.
21	6-3/4	Smith	SV2	5996	6108	112	16½	Dull.
22	6-3/4	Reed	YS1	6108	6213	65	18½	Pull for DST. Recon.
23	6-3/4	Smith	SV2	6213	6300	87	11-3/4	
24	6-3/4	Hughes	OWV	6300	6363	63	15½	
25	6-3/4	Reed	YS1	6363	6400	37	13	
26	6-3/4	Reed	YH	6400	6433	33	12-3/4	
27	6-3/4	Smith	C2	6433	6471	38	9½	
28	6-3/4	Reed	YM	6471	6504	33	9-3/4	
29	6-3/4	Reed	YH	6504	6536	32	12½	
30	6-3/4	Smith	L4	6536	6559	23	7-3/4	
1	6-11/16	Christansen	Diamond Core	6559	6823	264	-	
	6-1/4	Bowen	Clusterite	6823	6827	4	-	Cored w/Bower junk basket.
31	6-3/4	Reed	YHR	6827	-	-	-	Hit bridge at 4520 & locked cones.
32	6-3/4	Reed	YHR	6827	6832	4	-	Drilled to cond. hole.
2	6-11/16	Christansen	Diamond Core	6832	6901	342	73½	
33	6-3/4	Reed	YHR	6901	6935	34	11	Dull.
2	6-11/16	Christansen	Diamond Core	6935	6994	59	-	Core No. 5. Full rec.

BIT NO.	SIZE	MAKE	TYPE	IN	OUT	FOOTAGE	HOURS	REMARKS
2	6-11/16	Christansen	Diamond Core	6994	7053	59	-	Core No. 6. Full rec.
34	6-3/4	Smith	LH	7053	7070	17	7	
3	6-11/16	Christansen	Diamond Core	7070	7223	153	-	
35	6-3/4	Smith	L4	7223	7243	20	6-3/4	Pull for logging.
36	6-3/4	Reed	YH	7243	7259	16	6½	Pull for Core No. 10
3	6-11/16	Christansen	Diamond	7259	7288	29	-	

MUD CHARACTERISTICS

(Note: Cable tool hole to 1380, drilled with air to 4671)

DATE	DEPTH	WEIGHT	VISCOSITY	WATER LOSS	pH	FILTER CAKE	REMARKS
2-10	4671	8.2	77	9.2	12	1/32	Fishing.
2-11	4671	8.9	72	6.0			Fishing.
2-15	4671	8.7	70	4.8	11.5	-	Fishing.
2-16	4671	8.9	94	4.2	11.5	-	Fishing.
2-19	4692	9.2	49	-	-	-	Drilling.
2-20	4704	9.1	65	5.2	-	-	
2-21	4787	9.0	45	4.0	10.5	1/32	
2-22	4831	8.9	38	-	-	-	
2-23	4922	9.1	48	6.0	-	2/32	
2-24	4949	9.0	56	6.0	10.5	-	Prep. to DST.
2-25	4999	9.0	49	7.0	-	-	
2-26	5092	9.4	47	5.6	10.5	-	
2-27	5168	9.5	50	6.4	10.5	-	
2-28	5246	9.6	50	4.4	10.5	-	
3-2	5382	9.6	67	9.5	10.5	-	Sand 3/4%.
3-3	5451	9.7	47	6.6	-	-	
3-5	5494	9.7	64	4.0	10.0	2/32	Sand 1/2%.
3-6	5546	9.2	62	5.0	-	-	
3-7	5701	9.9	83	5.0	10.0	2/32	Prep. to DST.
3-8	5719	9.7	96	5.0	-	-	DST
3-9	5755	9.9	91	5.8	10.5	-	
3-10	5853	9.8	65	5.4	-	-	
3-11	5996	9.9	96	-	-	-	Ran DST.
3-12	6016	9.4	63	7.0	10.5	-	
3-13	6079	9.9	110	5.4	-	-	Running DST.

DATE	DEPTH	WEIGHT	VISCOSITY	WATER LOSS	pH	FILTER CAKE	REMARKS
3-14	6116	9.8	61	5.8	10.5	-	
3-15	6213	9.7	64	6.2	10.5	-	
3-16	6300	9.9	65	6.2	10.5	-	
3-17	6400	9.9	63	6.2	10.5	-	
3-18	6453	9.8	53	6.4	-	-	
3-19	6471	9.7	52	5.8	10.5	-	
3-20	6536	9.5	58	-	-	-	
3-22	6580	9.6	47	5.8	10.0	2/32	Sand 3/4%.
3-23	6665	9.8	52	5.4	9.0	2/32	Sand 3/4%.
3-24	6773	10.0	64	-	-	-	Prep to jet pits.
3-25	6823	10.0	64	-	-	-	
3-26	6853	9.7	60	5.0	10.0	-	2% Lube flow.
3-29	6930	9.6	60	5.8	10.0	2/32	ss ½%. Lube flow 2½%.
3-30	7035	9.6	74	5.8	10.0	2/32	ss 3/4%. Lube flow 1-3/4%.
3-31	7070	9.6	64	[illegible].4	10.0	2/32	ss ½%.
4-1	7130	9.5	65	6.8	10.0	-	ss ½%. Lube [illegible] 3/4 %.
4-3	7212	11.6	75	-	-	-	
4-4	7236	11.4	70	-	-	-	

HOLE DEVIATION SURVEY

1504	2^{o}
1670	$1-1/4^{o}$
1868	$1-1/4^{o}$
2550	$1-1/4^{o}$
3245	2^{o}
4300	$1-1/2^{o}$
5223	$3/4^{o}$
5853	2^{o}
6213	$1-1/2^{o}$
6400	$1-1/2^{o}$

27

SUMMARY OF SHOWS

UINTA FORMATIONS: SURFACE TO 1240'

This section was drilled with cable tools. No shows of oil or gas were noted in this section. Fresh water was encountered in a sand at approximately 1360 which rose to within 400 (?) feet of the surface.

GREEN RIVER FORMATION: 1240-3740'

The entire Green River formation was drilled using air as a circulating medium. Only very slight shows of oil stained marlstone were noted from 1660-1680, 1930-1950, 2020-2030, 2170-2180, 2230-2250 and from 2500-2510. The sanstone and ostracadal limestone present in this section were not saturated with hydrocarbons. The producing sands of the Red Wash field were not well developed in this well and were very thin, and were hard and tight. No show was noted in the Douglas Creek member.

WASATCH FORMATION: 3740-4970

The Chapita Zone sands which appeared wet in the No. 1 Bonanza Unit were not developed in the No. 3 well. The sands occurred at 4040-4070, 4100-4140, and from 4240-4300. The last sand was the only one with any show and this consisted of tar in the sample. At 4470-4490 a 20' sand which was fine grained, gray, well sorted, calcareous and soft and gave a small gas flow. A 10' sand from 4640-4650 had tar in the sample also.

At 4671 pipe was stuck in the hole. After fishing operations were completed the well was mudded up. Mud logging operations began at a depth of 4691 feet. A sand from 4908 to 4925 had a gas show of 140 units total against a background of 10 units. Drill stem test No. 1 tested the interval 4886-4950. This zone tested 132,000 cubic feet of gas per day.

PALEOCENE: 4970-5425

The Paleocene section which was drilled with No. 3 Bonanza well had numerous drilling breaks with no significant gas kicks. Core 1 was taken from 5076-5088 with 7½' out of 12 recovered, of which 2 feet was sand and 5½ feet was shale. A sand from 5163 to 5180 was circulated out but had no show. DST No. 2 and 2-A were run to evaluate the cored interval 5302-5362. The core was taken when mud gas increased from 8 to 24 units. Both DST's were misruns.

DST's 3 and 4 were attempted to test the lower part of core No. 3 but was misruns. A sand at the sample top of the Mesaverde had a 20 unit gas increase. The lower part of this sand was cored and a sand from 5465 to 5484 had a 140 unit increase. The zone remains to be evaluated when electric logs are run. This was the best gas show to date in the well.

MESAVERDE FORMATION: 5425-T. D.

No significant shows of gas or oil were encountered in the upper Mesaverde sands from 5425 to 5682. From 5682 to 5695 a sand in this interval had a gas kick of 195 units kick with traces of butanes and pentanes. DST No 5 and 6 were attempted to test this interval. DST 5 had a plugged tool and DST 6 recovered 250' gas cut mud. This is not considered a test of this interval and the sand remains to be evaluated on the electric logs.

At 5845-5880 a sand was encountered which gave a 30 unit increase over the background. At 5940-5955 a gas increase of 100 units net was detected. DST No. 7 was run to evaluate this zone but was a misrun and this zone should be checked on electric logs for evaluation. DST No. 8 was run to test a sand from 6072-6105. This sand had an increase of gas to 190 units from a background of 10 units with traces of propane. This DST recovered 65' of gas mud. The zone is probably hard and tight with low permeability and porosity. Sonic logs should augment this conclusion.

From 6165 to 6180 a sand was encountered which increased the gas readings to 120 units, all of which was methane. Thus, the highest gas readings were probably due to thin, interbedded coals. From 6255-6265 the background increased from 50 units to 220 units, with a trace of propane and butane. Although this zone was not tested, it should be carefully checked on the electric logs.

Numerous thin coal beds were encountered which gave slight increase in mud gas from 6300 to 6500. A thin gray, hard, and tight fine grained sand from 6380-6385, had 100% recovery, gave blue flourescent but gave a slow cut. Only a 12 unit increase was noted in this sand.

From 6755-6770 a 300 unit gas increase was recorded in a gray-white, fine grain sand. This zone also remains to be evaluated on electric logs, as it was decided to withhold testing until logs were run and evaluated since we were having trouble testing due to plugging of the tool and the failure of packer seats. An increase of 100 units was noted in a sand from 6790-6830. This zone should also be checked. From 6878 to 6890 a sand had a 40 unit increase. From 6905 to 6915 slightly pale blue flourescent and cut was noted in a gray-white, fine grain sand.

Core No. 5 was cut from 6935-6994. While coring gas increased to a maximum of 250 units.

The core consited of sand and shale. The sand was gray-white, very fine grained with good gas odor. Core No. 6 was cut from 6994 to 7053, with full recovery. There was a 17' sandstone, greyish-white, very fine grained with gold flourescence and with trace of cut. Core No. 7 was cut from 7070 to 7130 with full recovery. The core consisted of sandstone, shale, and thin coal seams. The sand was very fine grain with greeish-yellow flourescence and greenish-blue cut.

Core No. 8 was cut from 7130-7190 with full recovery. There was an 18 foot sand in this core, very fine grained, with greenish-yellow flourescence and with a streaming blue cut and with good gas odor. At the base of the core was a 15' sand, very similar, with very good blue cut and with good blue flourescence.

Core No. 9 was cut from 7190 to 7223. Recovery was 31 feet. While coring the hole started to unload. The rams were closed and the mud was weighted up to 11.3 pounds per gallon. The core consisted of 14 feet of sandstone with good gas odor and flourescence and cut. The sand was very fine grained, gray, tite, with shale partings. There was one foot of siltstone on the base of the sand and 16 feet of sandstone, grey, very fine grain, tite, with vertical fracturing throughout 4 feet This sand had fair gas odor, dull green flourescence and good blue cut.

Hole was drilled with a rock bit from 7223 to 7236. Schlumberger logs were run and hole was corrected to 7238. While waiting for casing to arrive on location it was decided to drill ahead and cut a rat hole. At 7247 a drilling break was encountered and a very fine grain sand was encountered. This sand had a mud logging show, with gas readings increasing 100 units. Core No. 10 was cut from 7259 to 7488 with full recovery and a Schlumberger IES log was run to total depth of 7488 feet.

Respectfully submitted,

Robert E. Covington, Consulting Geologist
Vernal, Utah

FORM OGCC-8-X

STATE OF UTAH
OIL & GAS CONSERVATION COMMISSION
310 NEWHOUSE BUILDING
SALT LAKE CITY 11, UTAH

REPORT OF WATER ENCOUNTERED DURING DRILLING

Well Name & Number: BONANZA UNIT #3

Operator Pacific Nat. Gas Explor. Co. Address 366 South 5th East Phone _____

Contractor _____ Address _____ Phone _____

Location: ___ ¼ ___ ¼ Sec. 27 T. 9 N S R. 24 E W Uintah County, Utah.

Water Sands:

	Depth		Volume	Quality
	From	To	Flow Rate or Head	Fresh or Salty
1.	1360 '	?	400' Head	Fresh
2.				
3.				
4.				
5.				

(Continued on reverse side if necessary)

Formation Tops:

Top of Green River at 1240'

Remarks:

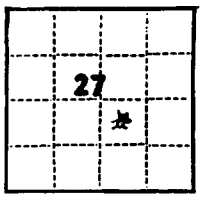
NOTE: (a) Upon diminishing supply of forms, please inform the Commission
(b) Report on this form as provided for in Rule C-20, General Rules and Regulations and Rules of Practice and Procedure. (See back of form)

63

API # 43047155674

Form 9-593
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION



Sec. 27
T. 9S.
R. 24 E.
S. L. Mer.

INDIVIDUAL WELL RECORD

PUBLIC LAND: Date April 18, 1966 Ref. No. 2

Land office Salt Lake State Utah

Serial No. 071725-C County Uintah

Lessee ~~Pacific Natural Gas Expl. Co.~~ Lighting Field Bonanza

Operator *~~Pacific Natural Gas Expl. Co.~~ Lighting District Salt Lake City

Well No. 3 Subdivision C NW¼SE¼

Location 1980' from S. line and 1980' from E. line of sec. 27

Drilling approved January 9, 1962 Well elevation 5647 KB 5635 Gr. feet

Drilling commenced December 30, 1961 Total depth 7488 PB 4980 feet

Drilling ceased April 6, 1963 Initial production 831 MCFGPD TR-water

Completed for production Oct. 15, 1963 Gravity A. P. I.

Abandonment approved Oct 28, 1993 Initial R. P.

Geologic Formations		Productive Horizons		
Surface	*Lowest tested*	*Name*	*Depths*	*Contents*
Uinta	Buck Tongue	Wasatch	4919-4922	Gas

WELL STATUS

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1961												Drlg
1962							Drlg	DSI				Drlg
1963				Drlg	Tstg					GSI		
1966	PGW											
1984										ABD		

REMARKS * Well originally drilled by Caldwell & Covington and completed by Pacific Natural Gas Exploration Company as a Bonanza unit well.

1993 P&A

DISCOVERY WELL

(REPLACEMENT)

U.S. GOVERNMENT PRINTING OFFICE : 1964—O-746-789

(OVER)

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: SL-071725-C

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Hiko Bell Mining & Oil Company

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: P.O. Drawer AB, Vernal, Utah 84078

9. WELL NO.: Bonanza #3

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: NW¼SE¼ Sec. 27

10. FIELD AND POOL, OR WILDCAT: Bonanza

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 27, T9S-R24E, SLM

14. PERMIT NO.: 43-047-15674

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5635 Gr., 5647 K.B.

12. COUNTY OR PARISH: UINTAH

13. STATE: UTAH

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☒	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

(Pacific Natural Gas, was Original operator)

A 6 3/4" hole was drilled to 7288'. 4½" J-55 casing was set to T.D. and cemented with 463 sx. Well is presently completed in the Wasatch Fm. From perforations at 4919-4922 with cast iron bridge plug at 4980. Three sets of perfs are open below the bridge plug in the Mesaverde Formation, from 6584-6587, 6071-6074, and 5683-5686 with a bridge plug at 6615'. These three sets of perfs tested 1.3 MMCFPD with some water and oil. Plan to kill well with salt water and drill out bridge plug at ~~6615'~~ 4980'. The zones will be tested and frac'd to make commercial production. The Mesaverde zones will be produced through the tubing, with a packer set at 5000'.

Plan to commence operations by 1-15-83

NO NEW OR ADDITONAL SURFACE DISTRUBANCE IS ANTICIPATED FOR THIS PROGRAM.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 1/18/83
BY:

18. I hereby certify that the foregoing is true and correct

SIGNED Robert E. Covington TITLE Sec. Treas. DATE Jan. 4, 1983

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

R. J. Firth, State of Utah Natural Resources Oil & Gas

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Hiko Bell Mining & Oil Company

3. ADDRESS OF OPERATOR
P.O. Drawer A B, Vernal, Utah 84078

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1980 N/S and 1980 W/E
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
SL-071725-C

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

9. WELL NO.
No. 3

10. FIELD OR WILDCAT NAME
Bonanza

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 27, T9S-R24E

12. COUNTY OR PARISH
Uintah

13. STATE
Utah

14. API NO.
43-047-15674

15. ELEVATIONS (SHOW DF, KDB, AND WD)
5647KB 5635GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☒		☐
(other)			

RECEIVED
JUL 18 1984
DIVISION OF OIL GAS & MINING

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Well has 10 3/4 csg set at 327' w/200 sx and 7 5/8" OD, J-55, 26.40 # set at 3272 .60' KB w/175 sx and 7280' of 4½", 13.5 #, N-80 and J-55, 11.6 # set with 154 sx, cast iron bridge plug is set at 4980'. Plan to leave all casing in hole and will dump 10 sx on top plug, and squeeze perforations 4922-4919' w/ 50 sx cement ① and set cement plug from 100' to surface. Will remove well head and install dry hole marker, fill pit, level location and reseed.

The only productive zone in the well was a Wasatch sand which was perforated from 4919-4922 and produced gas with increasing amounts of water. Well was shut in as non-commercial. The only perfs open above the bridge plug is the 4919-4922 zone.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Robert E. Lauriston TITLE Sec-Treas. DATE 7-16-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 7/19/84
BY: John R. Baza

① Perforate at 3325' & squeeze perfs to leave 100' plug inside & outside of 4½" csg. at the level of 7 5/8" csg shoe.

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424

5. LEASE DESIGNATION AND SERIAL NO.
SL-071725-C

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

10

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
OCT 18 1984
DIVISION OF OIL
GAS & MINING

7. UNIT AGREEMENT NAME
DIRTY DEVIL UNIT

1. OIL WELL ☐ GAS WELL ☒ OTHER

8. FARM OR LEASE NAME

2. NAME OF OPERATOR
HIKO BELL MINING & OIL COMPANY

9. WELL NO.
No. 3

3. ADDRESS OF OPERATOR
P.O. DRAWER AB, VERNAL, UTAH, 84078

10. FIELD AND POOL, OR WILDCAT
Bonanza

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980 N/S & 1980 W/E (NW¼ SE¼) Sec.27

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec.27, T9S-R24E, SLM

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
API #43-047-15674	5647 KB 5635 grd.	Uintah	Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Old T.D.7288. Plugged back to 4980'. Well has 10 3/4" surface casing set with 200 sx. Intermediate string of 7 7/8" casing was set at 3272.60' & cemented with 175 sx. Production string of 4½" 13.5# N-80 and 11.6# J-55 casing was set at 7280 & cemented with 154 sx, Well was plugged back by setting cast iron bridge plug at 4980'. Well was perforted 4922-19. Set 2 sx cement on top of bridge plug with dump bailer. Squeezed perfs 4922-19 with 50 sx. Wait on cement 4 hrs. Test plug with 1500# weight. Test ok. Filled hole with 9.2 mud. Perforated 4½" casing at 3375. Established circulation. Squeezed with 50 sx. cement. Wait on cement 6 hrs. Tested with 1500# wt. Held ok. Braidenhead squeezed 10 3/4" casing. Set cement plug in 4½" casing from 427 to 227'. Wait on cement 8 hrs. Tested plug with 1500# wt. Held ok. Set 25 sx. cement plug at surface in 4½". Filled cellar. Cleaned location. Preparing to fill pit and reseed location. Set 4" diameter steel pipe regulation marker in accordance with 43 CFR 3160, 4' above ground and welded required information onto marker, with orange peel-welded cap on top.

ACCEPTED
~~APPROVED~~ BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 10/23/84
BY: John R. Baza

18. I hereby certify that the foregoing is true and correct

SIGNED Robert E. Covington TITLE Sec.-Treas. DATE 10-10-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side